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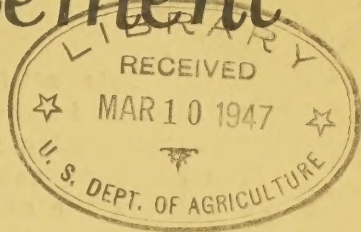
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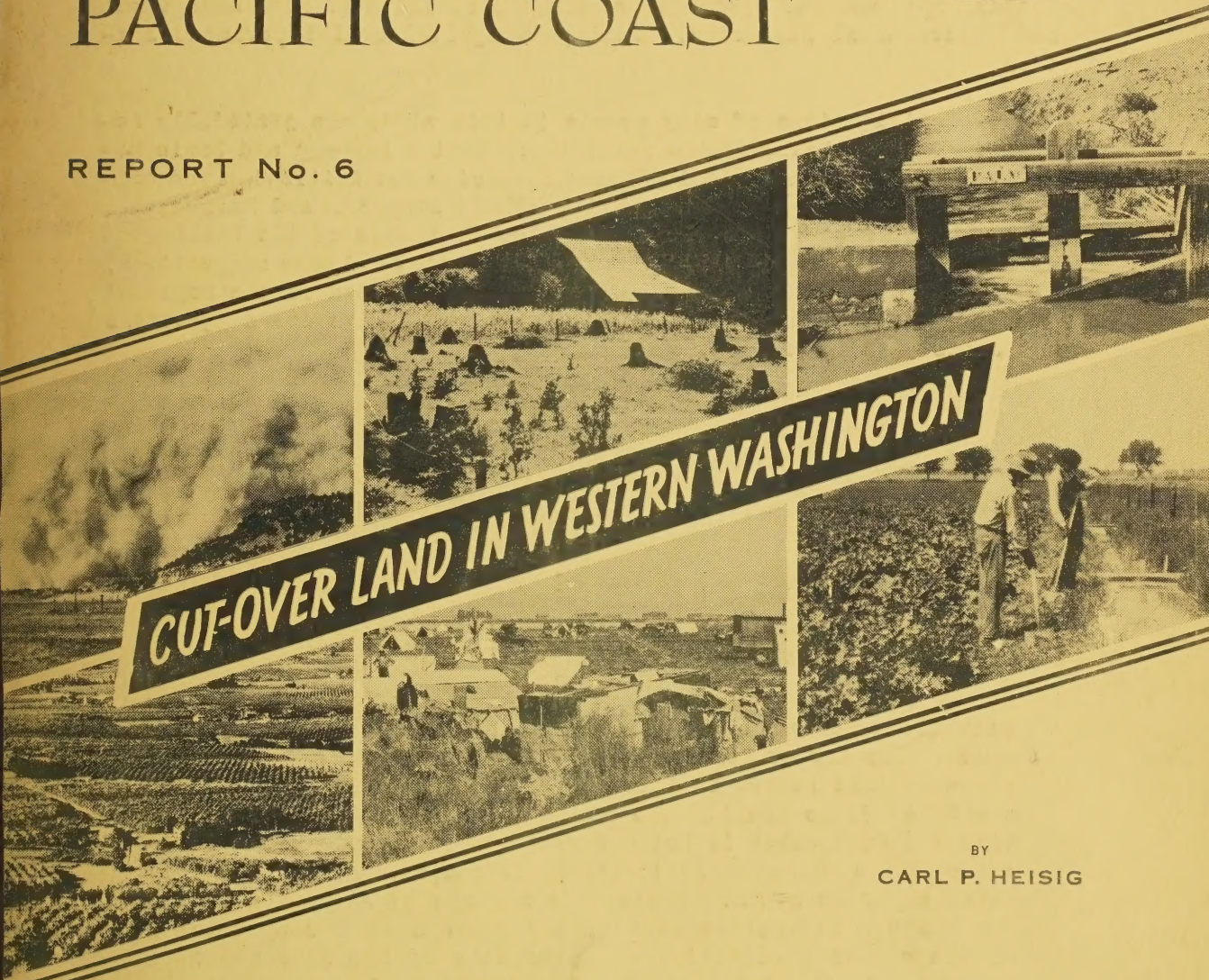
ON THE

PACIFIC COAST



REPORT No. 6

CUT-OVER LAND IN WESTERN WASHINGTON



BY
CARL P. HEISIG

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL ECONOMICS

IN COOPERATION WITH

WASHINGTON AGRICULTURAL EXPERIMENT STATION

ACKNOWLEDGMENTS

This study is part of a larger study of migration and land settlement in the Pacific Coast States made by the Bureau of Agricultural Economics in cooperation with other Federal and State agencies. The study of settlement of cut-over lands of western Washington was a cooperative effort of the Bureau of Agricultural Economics, United States Department of Agriculture, and the Division of Farm Management and Agricultural Economics, Washington Agricultural Experiment Station.

Contributions of many people in this study are gratefully acknowledged, particularly the following: Marion Clawson and Davis McEntire of the Bureau of Agricultural Economics for initiation and outlining of the study; Earl Franklin, Harold Brogger, and Harry Voth, who obtained most of the field data; Ben H. Pubols of the Washington Agricultural Experiment Station, who collaborated and gave suggestions; and Edwin F. Landerholm, Harold Brogger, and members of the regional office staff of the Bureau of Agricultural Economics for suggestions and assistance in preparation of the report.

This publication is one of 12 proposed reports dealing with the problems of migration and settlement on the Pacific Coast. The number assigned (Report No. 6) reflects the logical place of this report in this series. This is the fourth to be completed (June 1941). The study of these problems of migration and settlement is being undertaken jointly by three divisions of the Bureau of Agricultural Economics. The studies have three major segments: State-wide surveys of migration to the Far Western States; detailed field surveys on a sample basis of the economic situation and prospects of migrants who have relocated in these States; and an appraisal of the more important public policies affecting the settlement of the migrant group.

CUT-OVER LANDS OF WESTERN WASHINGTON

A Study of Settlement Experience and Opportunities

By

Carl P. Heisig, Agricultural Economist

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SUMMARY AND CONCLUSIONS

Settlement of cut-over lands in western Washington received a fresh impetus during the 1930's because of lack of employment in urban areas and because of migration to the Pacific Northwest of distressed farming populations from other areas, particularly the Great Plains. An understanding of the problems and possibilities of the settlement of cut-over land is important to the settlers themselves, to local, State, and National Governments, and to the many individuals who may be contemplating movement onto such land.

More than one-half of the 1,051 families living in the five local areas studied had taken over their farms after 1929. Many of these settlers moved onto farms that had been developed previously. About 50 percent of these settlers were from the State of Washington. Slightly less than one-half of those from outside Washington, or 22 percent of all new settlers, came from the Great Plains.

Size of Farm.- Many farms were small from the standpoint of total area and extremely small as measured by cleared acres. One-third of all occupied farms were less than 20 acres in total area. An additional 43 percent were from 20 to 45 acres in size. About 75 percent of all farms had less than 10 acres of cleared land in 1939, and about one-third of all farms had less than two acres cleared. Livestock numbers were generally related closely to the number of cleared acres.

Work on the farm accounted for no more than one-third to one-half of the operator's time on many of the farms. Almost 20 percent were classed as undeveloped farms, with practically no cleared land or livestock, though this group averaged 30 acres in the farms.

Farm Income.- More than 60 percent of total farm receipts came from the sale of livestock products, chiefly milk and eggs. Feed purchases constituted over 50 percent of all farm expenses on most farms, because little feed other than hay was produced.

Farm expenses were greater than farm receipts on undeveloped tracts and farms with less than 100 man-days of productive farm work in 1938. These farms averaged less than 5 acres of cropland and less than 5 productive animal units per farm. Farms established before 1930, having from 100 to 200 days of productive farm work, averaged 18 acres of cropland, 12 productive animal units, and family farm incomes of \$104. Farms established before 1930, having more than 200 days of farm work, averaged 31 acres of cropland, 22 productive animal units, and family farm incomes of \$353. Relatively few farms established after 1929 had more than 100 man-days of productive work.

In addition to the farm income, most farms contributed substantially to the family living through food and fuel produced on the farm and through provision of a dwelling. The value of these farm privileges averaged more than \$300 for all groups of farms except the undeveloped tracts, which averaged \$124, so that even where expenses exceeded receipts there was a net gain to the family through farm products consumed by the family.

Source of Funds Used in Family Living.- Families on undeveloped tracts and on farms with less than 100 days of productive farm work were dependent upon off-farm employment and public relief assistance, for income. They averaged approximately \$200 from public assistance and a like amount from off-farm employment. The families on the larger farms obtained practically no relief assistance and depended upon off-farm employment to a lesser degree than did the families on the smaller farms. Only 18 percent of the families who settled before 1930 received public assistance, whereas 54 percent of the families on new farms relied to some extent on public assistance. About one-fourth of these new occupants received in excess of \$500 per family from public assistance from April 1938 to March 1939.

Living Conditions.- Total cash expenditures for family living averaged about \$475 per family. Small families had more cash to spend per person for family living than did large families. Only 8 percent of one- and two-person families spent less than \$100 per person per year, whereas 78 percent of the families with seven or more persons were below this amount. Families of three to six persons were intermediate.

More than \$200 of food for use by the farm family was produced on most farms, but many farms neglected this possibility of improving their diets. Each family should produce as much as possible of the family living on the farm. Cold-storage locker plants located conveniently near the rural areas might improve the possibilities in many cases.

Housing was inadequate on many farms, particularly among the recent settlers, one-fourth of whom were living in inexpensive shack-type houses. Most families on cut-over land lived in frame houses with no basement. Nearness to lumber-producing centers makes housing a less expensive problem here than in most parts of the country.

Progress.- Financial progress was generally slow. Liquid assets at the time of settlement were invested in the farm, and in 1939 most of the assets were embodied in the cut-over farm itself. Purchases of cut-over stumpland were made at an average price of \$15 per acre, usually with a small down payment and the balance in installments over a period normally from 5 to 10 years.

Land Clearing.- Most farms, even the older ones, have had only small acreages cleared by the present occupants. Less than 2 acres had been cleared by 1939 on over one-half of the farms settled from 1932 to 1935 and on more than three-fourths of those settled from 1936 to 1938. The most usual rate of clearing was a half-acre each year. A large percentage of the occupants cleared no land whatever. Few of the present occupants will see their farms fully developed unless more rapid means of clearing are employed.

The costs of land-clearing, by the bulldozer method of machine clearing, apparently have been reduced by one-half or more, if labor is considered a cost. Two-thirds of the clearing jobs done in 1939 by the bulldozer method were accomplished at a cash cost to the farmer of \$30 to \$75 per acre, not including burning of stumps and debris.

Financing of Clearing.- Lack of cash prevents most settlers from taking advantage of this method. The provision of credit is necessary if most settlers are to be expected to provide themselves with sufficient cleared land for a minimum adequate farm unit. The absence of dependence on public assistance of the people on farms with reasonably large cleared acreages is evidence that credit for clearing good land is desirable.

Assistance Alternatives.- Among the alternatives that might be used for advancing assistance for land clearing are the following:

(1) Establishment of cooperative clearing associations with the cost of the equipment advanced in whole or in part by a public-credit agency, such as the Farm Security Administration. Supplementary loans would be provided to individuals for payment of equipment used for clearing on individual farms.

(2) Public or privately owned clearing machinery with individual farm-clearing jobs done on a contract or hourly-rate basis, and with individuals receiving public or private credit for payment of machine hire.

(3) Clearing of large blocks of land by a public agency, with individual farmers buying such cleared land on a long-term contract basis at low interest rates. This plan is similar to that followed in the development of irrigation reclamation projects.

Land Selection Important.- Because of the variable quality of soils in western Washington it is highly important that only the land containing the better soils be cleared. Much upland gravelly soil is unfit for farming even after the land has been cleared. If credit is advanced for land clearing, either directly or indirectly, the agency advancing such credit should assume responsibility for seeing that clearing is done only on the better lands. Each individual

tract must be considered separately and carefully by competent authorities, before loans are made for clearing. Detailed soil-survey maps should be consulted. Recommended land use maps that have been prepared by county land use planning committees are also helpful. Consideration should be given to the establishment of a State or Federal settlement service that would prevent purchase and clearing by settlers of land unsuited to farming.

Probable Needs for Development.— Dairy and poultry production offer the chief possibilities for farm income in western Washington. Consideration of the market structure, natural adaptabilities of the area, and managerial and financial requirements indicate that dairying as the major enterprise will provide the largest number of opportunities.

A minimum full-time family-type dairy farm on cut-over lands should have 12 milking cows, with 30 acres of cleared land for hay and grain production and an additional 30 acres of stumpland for seeded pasture. These are minimums for most soil types available — a larger unit would be preferable.

Most settlers in western Washington probably would need a minimum of about \$3,750 of additional financing to provide such a farm business, distributed about as follows: \$1,500 to clear 30 acres of stumpland by the bulldozer method at an average cash cost of \$50 per acre; \$1,500 for additional buildings, machinery, and equipment; and \$750 for livestock, principally dairy cows. A long-term, low-interest-rate loan would be necessary, with little or no repayments to be made during the first few years. Only qualified farmers should be considered for such loans.

Expected net cash farm income on such a farm would be \$650. Of this amount, about \$160 per year would be needed for a depreciation reserve. An absolute maximum of \$150 per year would be available for servicing the loan.

Frank recognition that in some cases a subsidy is involved should not necessarily discourage such an assistance program, because more than \$400 per year per family of public relief funds are now being used to assist about one-half of all new settlers. Substitution of farm income for income now received from public-relief funds should be in the public interest.

THE AREA AND ITS PEOPLE

Cut-over lands in western Washington have attracted many families who saw in them an opportunity to provide security and a means of livelihood. The settlement has extended over many years. Most of the more fertile, accessible river-valley tracts have been settled and vitally developed for a long time and now comprise the most valuable commercial-farming areas west of the Cascade Range. Settlement of the more rolling, less-fertile upland areas has proceeded irregularly, depending upon the quality of the soil, the difficulty and expense of stump removal, the nearness to urban areas, accessibility to roads, rivers, or railroads, the alternative opportunities, and other factors.

Many new farms were established in these cut-over areas during the 1930's by migrants as well as by local residents, not because the settlers expected to obtain large incomes, but because chances for work in industry or agriculture elsewhere were sharply curtailed. Most of these people have few attractive economic alternatives so their resources have been relatively small. This precludes buying high-prices cleared land and accelerates the movement to low-priced lands on which little, if any, clearing of stumps or brush has been done.

The study here reported was planned to disclose the problems encountered by settlers on cut-over lands of western Washington; how settlers are meeting these problems; what success, if any, these settlers are having in getting a living; and what policies and action might be adopted in connection with this kind of settlement.

Areas Selected and Data Obtained.- In the five areas of upland cut-over lands in western Washington selected for study, there appeared to have been an appreciable degree of settlement and development during the last decade (fig. 1). The boundaries of the areas studied were drawn to exclude any villages or towns on the edges of the areas, as well as river-bottom lands that have been developed for many years.

A brief schedule showing size and organization of farm, land clearing, and family and off-farm employment information was obtained for each of the 1,051 families occupying land within the five sample selected areas. These schedules were not obtained for land included in a few villages within the areas studied. In addition, a detailed schedule of farm organization and farm management, family history, family expenditures, off-farm employment, relief history, and other information was obtained from 267 families, or approximately one-fourth of all occupants of land within the areas. The approximate land area, number and average size of occupied farms, and percentage of land cleared in each of these local areas are shown in table 1.

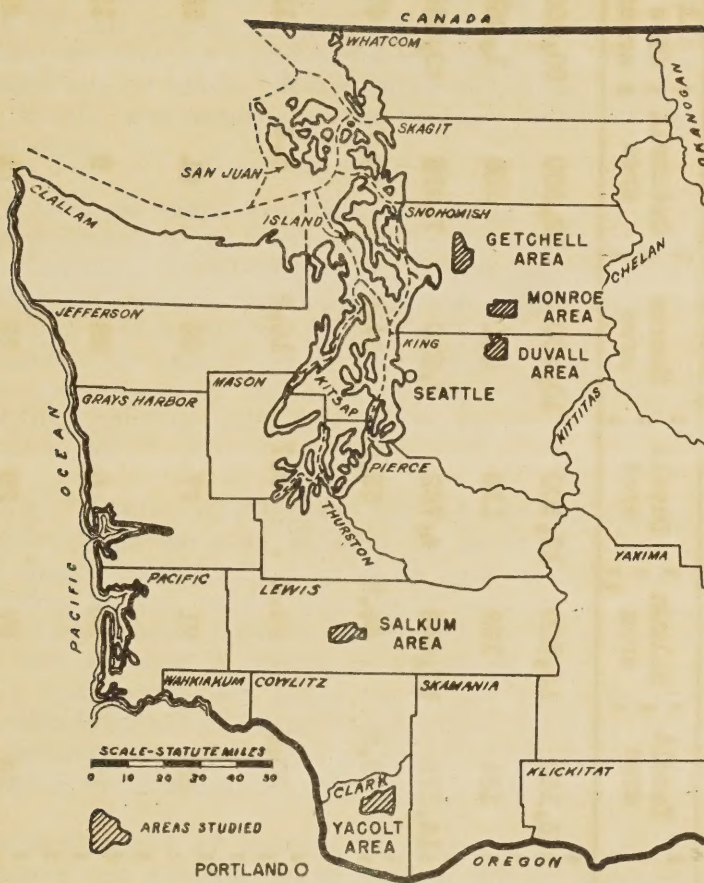


Figure 1.- Location and approximate extent of areas studied in western Washington, 1939.

Table 1.- Land area, number of farms, and agricultural use of land in the five local areas surveyed, western Washington, 1939

Item	Unit	Yacolt area	Salkum area	Duvall area	Monroe area	Getchell area	All five areas
Approximate land area:	Acre	23,100	15,300	17,500	10,200	19,300	85,400
Occupied farms	Number	184	192	136	281	258	1,051
Area in occupied farms:	Acre	14,575	12,446	4,732	9,810	7,926	49,539
Average size of farms:	Acre	79.2	64.8	35.2	34.9	30.7	47.1
Average cleared acre- age per farm	Acre	20.8	24.0	9.7	10.2	6.6	13.6
Percentage of land in: occupied farms	Percent	63	81	27	96	41	58
Percentage cleared of: total land area	Percent	17	30	8	28	9	17
Percentage cleared of: all land in farms	Percent	26	37	28	29	21	29

Description of the Area

Cut-over Lands Vary Widely in Quality.— Most of the original timber cover of western Washington has been removed by logging operations, except in the higher mountains and inaccessible tracts. The areas now being settled or considered suitable for settlement were logged 30 years ago or more. Today these cut-over lands are covered with stumps, brush, and second-growth timber. Some of this timber is of marketable size.

Merely because there are numerous large stumps on a piece of land, it does not follow that the soil is fertile and adapted to growing cultivated crops. Much commercial timber has been harvested from rough, gravelly soil areas that have little or no value for anything but the continued production of forests. Because of the profuse growths of vegetative matter found in western Washington, many settlers who have come from parts of the country where vegetation is sparse are misled and think that the soil must necessarily be equally productive for cultivated plans.

Actually, little relation exists between the quantity of native vegetative growth and the soil quality in an area. Soil types vary markedly and change rapidly from good to poor quality within short distances. Owing to the relatively small amount of precipitation during the growing season here, a soil that is retentive of moisture is necessary for successful farming. Although there are still many acres of good, uncleared farm land, there are likewise many acres of poor, unproductive soil. Proper selection of land is one of the most vital considerations for the prospective settler who contemplates developing a farm out of timber or stump land.

The northern part of western Washington lies mainly in the Puget Sound Basin and extends roughly from the southern part of Thurston County northward. This is largely a glaciated territory. Three main physiographic areas are apparent: (1) level tracts of recent alluvial deposits along streams; (2) rolling upland tracts of glacial till, outwash plains, and moraines; and (3) mountainous tracts. Most of the land included in (1) has been settled and developed for many years, though there are occasional acreages of good bottomland soils that have not been settled nor developed fully. Much settlement has occurred on the upland areas of (2) in the past, and it is here that most recent settlement has taken place, though only a small percentage of the total acreage is cleared. Soils are generally gravelly or sandy loams formed from glacial gravel and outwash under a heavy stand of timber in a mild, moist, nearly frost-free climate 1/. Soils underlain with

1/ "Soil Survey of Snohomish County, Washington," (typed manuscript) U.S. Dept. of Agric. and Wash. Agric. Exp. Sta. in cooperation, 1940.

consolidated or compacted material usually retain moisture better than soils overlaying loose, porous drift or outwash material. Upland soils vary widely in quality and productivity, and definitely have less farming value than do the valley soils. Stumps are usually numerous, large, and deep-rooted, so clearing costs are high. As soils vary greatly within short distances, each tract must be appraised separately.

In the non-glaciated parts of southwestern Washington the three main types of physiographic areas also exist, though upland soils generally are somewhat more uniform. These upland soils are residual in character, underlain by shales and sandstones, and are generally somewhat finer in texture than soils derived from glacial material. Here, again, local variation in topography and soils necessitates close inspection of individual tracts to ascertain agricultural possibilities.

Rainfall varies widely but is moderately heavy in most areas that are being settled, generally from 25 to 60 inches a year. Most of the precipitation occurs in the winter with relatively little during the late growing season, especially in July and August.

Population Movement into Western Washington During the 1930's

Total population in the 19 counties of western Washington increased from 1,103,899 in 1930 to 1,216,529 in 1940, or a net increase of 112,630. Most of this increase occurred outside of cities. Those cities that had 10,000 or more population in 1940 had an increase in their population of 9,890. Incorporated towns and cities with 2,500 to 10,000 population in 1940 had a net increase of 3,322 during the decade. The remaining 99,418 net increase in population took place in rural areas and towns of less than 2,500 population.

Natural increase during the decade because of a surplus of births over deaths amounted to about 28,000, which leaves about 85,000 as an addition to the population through migration. This net addition from migration, however, was the result of considerable shifting of population, because many people moved out at the same time that others were moving in.

It is estimated that, from 1930 to 1939, more than 160,000 persons moved into western Washington from other parts of the country 2/. Comparison of this estimate with the net addition from migration

2/ Estimates from a migration survey made in 1939 by the Bureau of Agricultural Economics and the Farm Security Administration, with the cooperation of the Washington State Dept. of Education.

leads to the conclusion that for every two persons who moved into western Washington during the decade, one person moved out. A high movility of population is thus indicated.

Some parts of western Washington received a much greater influx of people through migration than did others (table 2). The ratios indicate the relative density of inward migration, ignoring outward movements. Heaviest migration relative to 1930 population occurred in the adjacent counties of Skamania, Clark, and Cowlitz in the extreme southern part of western Washington, with more than 30 families moving in for each 1,000 of population in 1930. The southwestern counties, which are relatively more agricultural than the counties bordering Puget Sound, received relatively greater in-migration.

Land Available for Settlement

To learn the extent of land available and suitable for settlement in western Washington is difficult. Detailed soil surveys are available for less than half of the counties 3/. Even in those areas covered by detailed surveys it is not always an easy matter to ascertain which soils are suitable for clearing and which are not. Obviously, suitability varies with economic conditions of the particular crops or farm products adapted to the area. For instance, relatively large acreages of glacial outwash plains in some parts were used for strawberry growing at certain periods in the past when prices were favorable. At present, considerable acreages of such land are no longer in cultivation. Poultry farming has been popular in some places of poor soils because it could be carried on advantageously even though practically all feed had to be bought.

County land use planning committees of western Washington have attempted to determine the acreage of land that is suitable for development by clearing, drainage, or diking. On the basis of these estimates the following approximate acreages have been recommended for development, by counties: 4/

3/ Detailed soil surveys are in progress or have been completed in the following counties: Clallam, King, Kitsap, Lewis, Pierce, Skamania, Snohomish, and Whatcom.

4/ Supplies by Edwin F. Landerholm, State Representative, Bureau of Agricultural Economics, State of Washington.

Table 2. - Population in 1930 and estimated in-migration from 1930 to 1939, counties of western Washington 1/

District and county	: 1930 population	: Number of families in the migration survey per 1,000 population in 1930
	: <u>2/</u>	
<u>Southwestern Washington:</u>		
Clark	: 40,316	31
Cowlitz	: 31,906	33
Lewis	: 40,034	27
Pacific	: 14,970	15
Skamania	: 2,891	33
Thurston	: 31,351	17
Wahkiakum	: 3,862	17
<u>Olympic Peninsula:</u>		
Clallam	: 20,449	19
Grays Harbor	: 59,982	19
Jefferson	: 8,346	10
Kitsap	: 30,776	20
Mason	: 10,060	27
<u>Eastern Puget Sound:</u>		
Island	: 5,369	10
King	: 463,517	7
Pierce	: 163,842	12
San Juan	: 3,097	5
Skagit	: 35,142	14
Snohomish	: 78,861	20
Whatcom	: 59,128	12
Total western Washington	: 1,103,899	14

1/ Migration survey made in spring of 1939, op. cit.

2/ U.S. Bureau of the Census.

<u>District and county</u>	<u>Acres</u>
<u>Southwestern Washington:</u>	
Clark	5,500
Cowlitz	19,500
Lewis	126,400
Pacific	3,100
Skamania	8,900
Thurston	42,500
Wahkiakum	<u>5,200</u>
Total	210,900
<u>Olympic Peninsula:</u>	
Clallam	76,400
Grays Harbor	77,000
Jefferson	26,200
Kitsap	(not available)
Mason	<u>25,000</u>
Total, excluding Kitsap County	204,600
<u>Eastern Puget Sound:</u>	
Island	8,800
King	1,200
Pierce	15,705
San Juan	6,200
Skagit	50,935
Snohomish	100,308
Whatcom	<u>26,700</u>
Total	209,848
<hr/>	
Total western Washington (excluding Kitsap County)	625,348

It is estimated that 25 percent of the land suitable for clearing is now part of existing farm units. These are admittedly approximations, but they indicate informed opinion as to extent and distribution of land suitable for development.

Place of Origin and Characteristics of Settlers

In this study, recently settled families were defined as families residing in the area at the time the survey was made, who had moved in during 1930 or later years. Of the 1,051 farm families living in the five sample areas, about 60 percent had moved into their respective localities since 1929. But this does not mean that population has doubled within the areas, because there was some outward movement of population, as indicated by the number of recent settlers who moved onto farms that had been previously occupied.

Many Settlers from Great Plains.- Slightly less than half the settlers who came from outside the State of Washington were from the Great Plains States (fig. 2). Approximately two-thirds of this group were from the northern Great Plains. About 55 percent of those who had moved into the areas since 1929 came from within the State of Washington and were not out-of-State migrants (table 14). There were some variations in the origin of settlers within each of the five areas, depending upon the particular location. For instance, the Yacolt area obtained by far the largest percentage of settlers from Oregon because of nearness to the Portland metropolitan district and to Oregon as a whole.

Previous Occupations Often Non-agricultural.- Almost half the recent settlers came from non-agricultural pursuits, which reflects the nearness of the areas to the metropolitan districts of Portland, Tacoma, Seattle, and other cities of western Washington. Many of this group were unemployed urban people who were trying to get greater economic security than had been possible during the years of low industrial activity. Their lack of experience in farming complicates the problems of adjustment to farming in cut-over areas and may increase the possibilities of failure.

Over half of the settlers had previously been engaged in some agricultural pursuit (few had been farm laborers). Approximately one-half of these had been in a tenancy status before they settled in western Washington, whereas in 1939 less than 9 percent of the recent settlers were renting farms.

Settlement on cut-over land often has meant a shift from tenancy status to farm ownership. Shifts from renter or laborer status to farm ownership have not necessarily involved an improvement of economic status, as farm ownership often consists only of an equity in an undeveloped stump-covered farm.

Reasons for Settlement Mainly Economic.- Reasons given by recent settlers for coming in reflected the diverse economic backgrounds of the families. In the group of settlers who came from

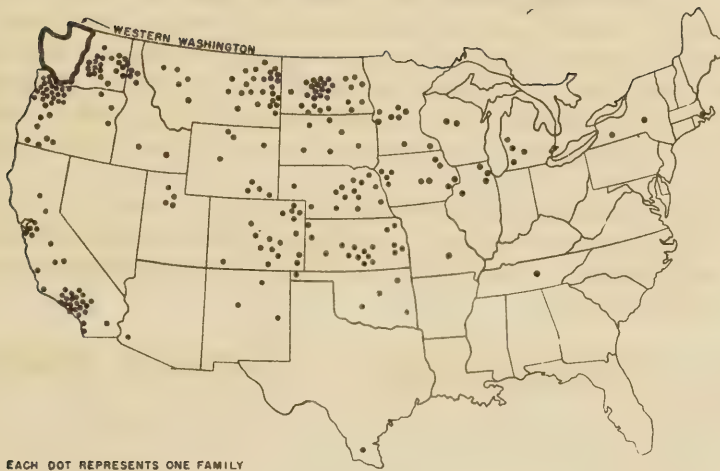


Figure 2.- Place of origin of settlers moving into the western Washington sample areas from 1930 to 1939, who came from outside western Washington.

non-agricultural work, most of whom were drawn from nearby urban areas, lack of opportunity elsewhere and availability of cheap land were frequently given as the reasons. Crop failure and drought were the primary reasons given for leaving the Great Plains States. The availability of cheap land and the presence of relatives in the area selected were reasons most usually given for settling in the areas studied. Liking for the local climate also was a frequent statement.

Age of Operator and Size of Family.-- Only 2 percent of the farm operators were less than 25 years old, and one-third of the total number of operators were less than 45 years. This indicates a relatively high proportion of older men on these cut-over farms. The slowness with which most farms are being developed suggests that the ultimate development of the farms will be done by succeeding generations, rather than by the present operators, unless methods are devised for increasing the present rate of land clearing.

The average number of persons per family was 3.4, which is approximately the average size of family in the entire population of western Washington. The 1,051 families were distributed by size of family as follows:

<u>Persons in family</u>	<u>Percent of families</u>
1	13.5
2	27.7
3	18.1
4	17.3
5 or 6	15.9
7 or 8	5.7
9 or more	<u>1.8</u>
All families	100.0

FARMS AND INCOME

Size of Farm and Systems of Farming

Cleared Acreage Very Small.— The number of acres included in the farm is a poor measure of size of operating unit in these cut-over areas, but it does indicate in part the potentialities for development. Many of the farms in these five areas were extremely small, even from the standpoint of gross area. About one-third of all farms occupied in the area were less than 20 acres in size. About 43 percent of all farms were from 20 to 45 acres in size; 15 percent were from 45 to 100 acres in size; and less than 10 percent of the farms were larger than 100 acres (fig. 3).

The number of cleared acres on the farm is a much better indicator of size of the actual productive plant than is the farm acreage. With the exception of poultry farms, it is the cleared land that makes possible the keeping of livestock. Stump or partially cleared pasture has little value for livestock production unless hay and grain are available from cropland. Almost one-third of the total number of farms had less than 2 acres of land cleared in 1939, and an additional 43 percent had from 2 to 10 acres of land cleared (fig. 4). Only 3 percent of the total had 40 or more acres of land cleared.

Most of the data included in this report are based upon detailed information obtained from a sample of about 25 percent of the farms in each area. The distribution of these sample farms as to acreage in farm and acreage of land cleared, compared with the distribution of all farms in the area, indicates that the sample selected represents rather closely the situation for all farms included in the five sample areas. The sample areas in turn are representative to a considerable extent of much of the cut-over areas of western Washington.

Livestock Numbers Related to Cleared Acreage.— A close relationship exists between the number of cleared acres on the farms and the number of productive animal units kept (table 15). Although some farms have rather large numbers of animals and only a few cleared acres, they usually are poultry farms that grow little or no feed, or dairy farms that produce little or no grain or hay but with relatively large acreages of uncleared stump pasture. More than 35 percent of the 1,051 farms in the five sample areas had fewer than 5 acres of cleared land, together with less than 2.5 productive animal units. As practically all farm income comes from either cleared land or livestock, this large percentage of farms that have small productive resources emphasizes that many farms are much below the size of farm that would furnish full-time employment to the farm family.

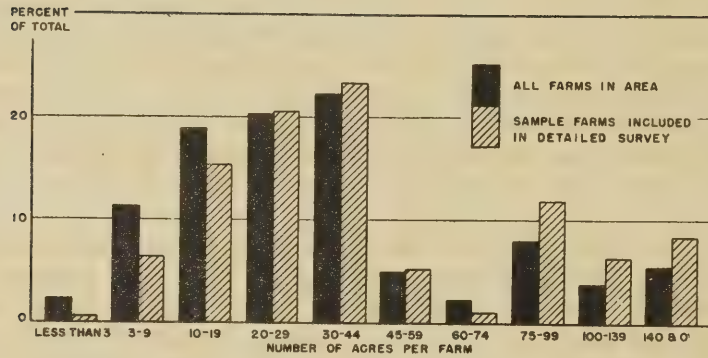


Figure 3.- Percentage distribution of all farms and of detailed survey farms, by specified acreages in farms, 1939.

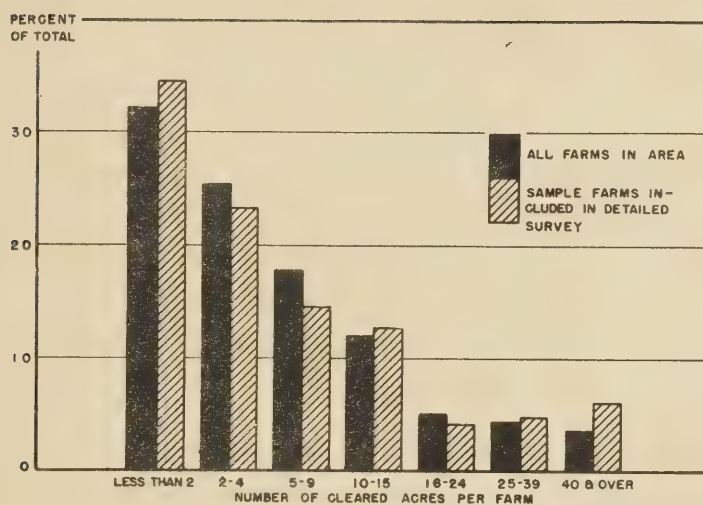


Figure 4.- Percentage distribution of all farms and of detailed survey farms, by specified numbers of cleared acres per farm. Very little land is cleared on most farms.

Farms Grouped for Analysis.-- For analysis and comparison the farms on which detailed information was obtained were divided into groups according to the length of time the farm had been developed (irrespective of the length of occupancy by the present settler) and to size of operation.

The measure of size used was the number of productive days of work furnished by the farm. This measure permits direct comparison on a work basis of such diverse enterprises as poultry, where a large flock may be kept on a small acreage of land but with full-time employment of the operator, and a beef or sheep enterprise, where large acreages of land are necessary for grazing but where the operator's time per animal or per acre is small. Full-time family farms provide for utilization of available family labor. When farming enterprises do not provide employment, the family has less chance to attain an adequate income from the farm, or it must seek work off the farm. Farms were grouped as follows:

Old farms:

- Small -- Farms in operation before 1930 having less than 100 P.M.W.U. 5/ in 1938.
- Medium -- Farms in operation before 1930 having from 100 to 199 P.M.W.U. in 1938.
- Large -- Farms in operation before 1930 having 200 or more P.M.W.U. in 1938.

New farms: 6/

Undeveloped tracts -- Those occupied pieces of land on which none of the following conditions was exceeded: 3 acres of cleared land, 25 P.M.W.U. of crops and livestock, or \$250 gross value of farm production, including value of farm products used in the home. Where any of these conditions are exceeded, the operation is considered a farm and is included in some other grouping. Length of development is not considered in this grouping, although only five farms of the group were settled before 1930.

Small -- Farms developed since 1930 having less than 100 P.M.W.U. in 1938.

Medium and large -- New farms having 100 or more P.M.W.U. in 1938.

5/ P.M.W.U. - productive man work unit: the amount of work performed during a 10-hour day at average rates of performance on crop and livestock enterprises.

6/ New and old farms are distinguished by the date the farm was placed in operation, rather than the date on which the present operator occupied the farm.

The terms "small", "medium", and "large" are relative. Actually the so-called large farms provided little more than full-time employment to one man, whereas the farms rated as small and medium supplied work for one man from one-third to two-thirds of the time.

Local Areas Vary.-- As the detailed-survey farms were taken on a random basis and appear to be representative of the entire number of farms in each area, the distribution of these farms within the various categories described gives a picture of the relative importance of different sizes and types of farms within each of the local areas studied.

For all five areas together, about 55 percent of the farms were placed in operation as going farm enterprises before 1930. The remaining 45 percent of the farms appear to have been started in 1930 or later. The importance of new farms in the total farm picture varied from area to area. In the Getchell area, 34 percent of the farms studied were classed as new farms, whereas in the Duvall area 64 percent of the farms studied were so classed.

There were marked variations also among areas as to the relative importance of the various sizes of farms. For instance, only 19 percent of the farms surveyed in the Duvall area had as many as 100 productive days of work and 30 percent of the farms in this area were listed as undeveloped tracts. No other area had as many as 15 percent of the farms classified in this particular group. On the opposite extreme was the Getchell area, in which 63 percent of the farms had 100 or more productive days of work on each farm. The Yacolt, Salkum, and Monroe areas were intermediate in size distribution. The large number of small farms in the Duvall area is a reflection of the comparatively unproductive farm resources, recentness of settlement, and nearness to the Seattle metropolitan area. Many of the occupants of land in this area were people who had retired from jobs in the city or who had been forced out by lack of non-farm work opportunities.

The areas varied in soil resources, though this was largely a matter of degree. For instance, most of the land in the Salkum area was potentially good farm land, whereas much of the land in the Duvall area was gravelly, non-productive soil. For lands that were cleared, however, the variations in soil productivity between areas were minor.

Crop Acreages and Livestock Numbers Limit Production.-- As one of the bases of grouping the farms was days of productive work, the acreage of crops increases from the small to the large farms on both the old and the new farms. This is true also of the number of productive animal units. Farms developed before 1930 and with less than 100 man days of productive work in 1938 had 7 acres of cropland and 5

productive animal units (table 3). New farms with less than 100 productive man days of work had 4 acres of cropland and 4 productive animal units. The total acreage of land in farms was approximately the same for both old and new farms in this small size group. Undeveloped tracts are occupied almost entirely by recent settlers who either have no intention of developing a farm or have not had sufficient time or capital resources therefor. These settlers are dependent almost entirely on off-farm work for their living, for they have an average of less than 1 acre of cropland and 1 productive animal unit.

The chief difference between new and old farms within the same size group as measured by productive days of work per farm was the number of acres of cropland and the extent of seeded pasture. The operators of the new farms have not had enough time to clear land and develop pasture. This is reflected in fewer dairy cattle, but this lack of dairy cows is partially offset by greater numbers of poultry on the new farms (fig. 5).

Approximately two-thirds of all cropland was devoted to growing hay in 1938. Clover hay produced higher yields than the other types of hay grown—1.8 tons—but, because clover is not adapted to all soils of the area, relatively little of this type was grown compared with oats and vetch hay or mixed grass and clover hay. These latter types yielded less than 1.5 tons per acre in 1938. Also, oats and vetch hay is a less valuable roughage than clover hay. Relatively little grain was grown on the old farms, and practically none on the new farms. Some corn for fodder was grown on a few farms, but this was a very insignificant crop. Crops other than grains and hay were grown hardly at all. On many farms a small patch of potatoes was found, and some grew root crops for feed, but in the aggregate these crops were of little importance.

Farms in the Yacolt and Salkum areas in the southern part of the general area studied averaged larger in size than did the farms in the three areas around Puget Sound. Dairying was a more important enterprise in the two southern areas than in the northern areas. This reflects the difference in size of farm and available feed resources.

Financial Results of Farming in 1938

The amount of family income obtained in many cases is disappointingly low, although these cut-over farms were presumably occupied for the purpose of producing the family living or at least supplementing it. Income and operating expenses varied with the productive resources on farms of different types and sizes.

Table 3.- Land use and livestock numbers on old and new farms of specified size, five local areas of western Washington, 1938

Item	Old farms			New farms		
	Small	Medium	Large	Un- developed tracts	Small	Medium and large
<u>Number of farms</u>	56	57	35	47	58	14
<u>Crops:</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
All hay	5.6	12.9	21.5	0.4	2.4	5.9
Small grains	.5	2.7	5.5	---	.1	---
All other crops <u>1/</u>	1.0	2.2	4.3	.3	1.0	1.2
Total	<u>7.1</u>	<u>17.8</u>	<u>31.3</u>	<u>.7</u>	<u>3.5</u>	<u>7.1</u>
<u>Other land use:</u>						
Farmstead, garden, roads	1.7	2.3	3.2	1.4	1.8	1.5
Cleared pasture	1.4	2.7	2.7	.5	.4	.3
Seeded pasture <u>2/</u>	5.6	17.9	36.2	4.7	4.1	1.4
Unseeded pasture <u>3/</u>	21.4	38.4	54.2	18.9	25.3	56.3
Other <u>4/</u>	1.4	3.4	3.6	4.0	.8	1.7
Total land in farm	38.6	82.5	131.2	30.2	35.9	68.3
<u>Livestock:</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
Dairy cows	2.7	5.7	10.6	0.3	1.5	4.0
Heifers and calves	2.2	5.4	7.5	.4	2.0	6.2
Other cattle	.1	1.5	1.8	---	.1	1.4
Sheep and goats	1.0	.4	1.2	.6	2.7	3.7
Hogs	1.2	3.9	6.7	.1	1.0	.9
Horses and mules	.8	1.5	2.5	---	.6	1.5
Chickens	34	119	323	12	59	485
<u>Productive animal units</u> <u>5/</u>	4.8	12.1	21.5	.7	3.9	14.9
<u>Productive man work units</u>	57	146	300	7	46	219

1/ Includes some idle cropland.

2/ Surface-cleared, brush, or timberland seeded but uncleared of stumps.

3/ Surface-cleared, brush, or timberland, not seeded but used for grazing.

4/ All other land not pastured, including stumpland, brushland, and timberland.

5/ Does not include horses and mules.



Figure 5.- Many cut-over farms grow no crops besides hay and pasture.
Hay is often grown among the larger stumps, as on this farm.

Farm Receipts Small on Many Farms.- Total farm receipts including crop and livestock inventory changes, averaged less than \$300 on both new and old small farms — that is, farms with less than 100 days of productive work. On the farms classified as undeveloped tracts, farm receipts were only \$31 in 1938 (table 4).

Receipts were mainly from the sale of livestock products, reflecting the importance of dairy and poultry in the farming operation. At least 60 percent of the total farm receipts came from the sale of livestock products for all groups of farms except undeveloped tracts.

Livestock sales were the next largest source of income. Sale of crops was relatively unimportant. "All other receipts" were composed mainly of payments of the Agricultural Adjustment Administration and the sale of timber products. Contrary to expectations, timber or wood sales were of minor worth even though most of the farms were cut-over timberland with appreciable amounts of second-growth timber on them.

Income from undeveloped tracts and from the small farms is mainly potential, and must await further development of the farms through clearing of land and addition of livestock before the families living on them will be provided with a moderate farm income.

Farm Expenses Chiefly for Feed.- The largest item of expense in all farm groups, except the undeveloped tracts, was for feed. A good part of the hay for feeding dairy cows was produced on western Washington farms, but relatively little grain was raised, necessitating large purchases of concentrates. Feed purchases were particularly large on poultry farms, which grew very little of the feed they used. Medium-sized and large new farms had the largest expense for feed of any group because of the greater percentage of poultry farms in that group.

Next to feed, the item of depreciation on buildings, machinery, and equipment was the largest cost. This expense does not necessarily have to be met each year, for it can be deferred temporarily, though over a period of years it must be met by replacement of buildings, machinery, and equipment as they wear out or become obsolete. Cash expenditures for upkeep and repairs of buildings and machinery were noteworthy, though not a large item. Livestock purchases, gasoline and oil purchases, and tax payments were other chief cash expenses of operation.

Very little labor was hired on most of these farms, the farm family being more than sufficient in most cases to provide all the labor needed. On the largest farms an average of about \$60 per farm was expended for hired labor in 1938.

Table 4.- Farm income and farm expenses on Specified sizes of old and new farms, five local areas of western Washington, April 1938 to March 1939

Item	Old farms			New farms		
	Small	Medium	Large	Un- developed: tracts	Small	Medium and large
Number of farms	56	57	35	47	58	14
Cash farm receipts:	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
Crops	17	29	87	1	16	3
Livestock	63	261	397	6	70	253
Livestock products	180	588	1,195	4	144	1,533
All other	34	38	28	20	29	5
Total cash receipts	<u>294</u>	<u>916</u>	<u>1,707</u>	<u>31</u>	<u>259</u>	<u>1,794</u>
Cash farm expenses:						
Hired labor	15	19	58	2	5	62
Seed and feed	151	340	733	27	173	978
Gas and oil	15	30	49	2	15	36
Taxes and insurance	24	38	62	6	12	30
Building & machinery repairs	17	35	18	2	21	21
Livestock purchases	36	80	97	12	31	142
All other expenses	22	56	75	12	20	34
Total cash expenses	<u>280</u>	<u>598</u>	<u>1,092</u>	<u>63</u>	<u>277</u>	<u>1,303</u>
Family cash farm income	14	318	615	-32	-18	491
Non-cash income:						
Inventory increases 1/	11	—	—	14	10	126
Non-cash expenses:						
Deprec. on bldgs. & machinery	98	169	236	31	80	137
Inventory decreases 1/	—	45	26	—	—	—
Family farm income 2/	-73	104	353	-49	-88	480
Farm production used in home:						
Food products	190	198	288	64	207	196
Wood for fuel	35	36	46	27	35	27
Dwelling rental	85	109	132	33	74	68
Total	<u>310</u>	<u>343</u>	<u>466</u>	<u>124</u>	<u>316</u>	<u>291</u>
Family farm earnings 3/	237	447	819	75	228	771
Non-farm income 4/	487	272	277	587	607	145
Total family earnings	724	719	1,096	652	835	916

1/ Crops and livestock.

2/ Family farm income is gross farm income minus farm expenses.

3/ Family farm earnings is family farm income plus the value of farm perquisites.

4/ From off-farm employment, relief assistance, pensions, and miscellaneous sources.

Food, Fuel, and Housing Are Important.— Not all of the income from the operation of the farm was in the form of cash sales. Important items in the family living were the food and fuel produced on the farm and consumed in the home, and the rental value of the farm dwelling (table 4). Food products used in the home averaged about \$200 in value for all groups of farms except undeveloped tracts, which averaged only \$64. Wood for fuel varied in value from \$27 to \$46 for each of the groups. Rental value of dwelling varied with size and type of the house and was least on the undeveloped tracts.

Total value of farm perquisites averaged from about \$300 to \$450 per farm for all groups except undeveloped tracts. Valuations placed on these non-cash items of farm receipts were at farm prices so they understate their equivalent value if obtained in urban areas. These non-cash items added greatly to the benefits derived from living in these rural cut-over areas, and when added to family farm income provide the families of the larger farms with reasonably satisfactory farm earnings — \$819 and \$771 per farm for the larger old and new farms respectively.

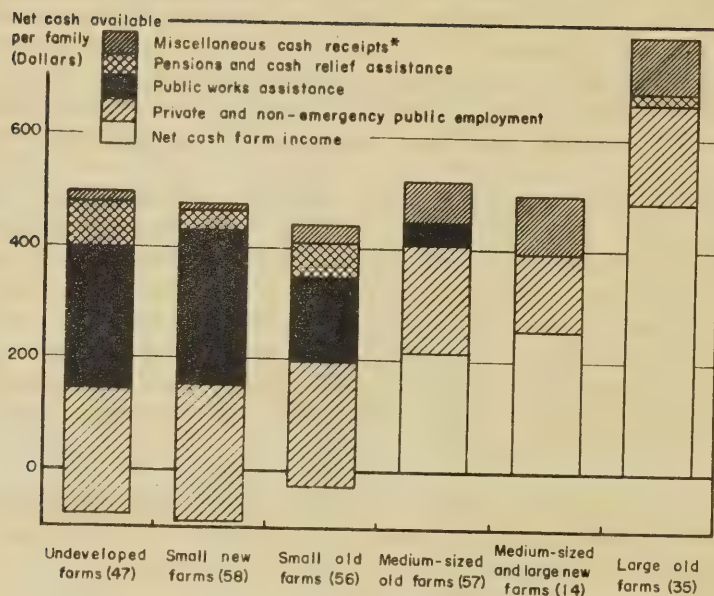
Most of these farms produced insufficient incomes to provide the money needed to meet family living expenses. Income from some source other than the farm was necessary in most cases.

Source of Funds Used for Family Living

The major sources of funds available for payment of farm operation and family living expenses and repayment of indebtedness were (1) sales of farm-produced commodities, (2) outside work or public relief, (3) borrowings, and (4) use of past savings. A farmer ordinarily expects to receive the greater part, if not all, of his income from the farm; yet many settlers in these cut-over areas expect part-time work off the farm either as a chief source of income or as a supplement to farm income. Loans are obtained for a variety of reasons, and, in a going enterprise, debt repayments are expected to exceed current borrowings except in the case of major investments in farm equipment or land, or in case of emergency. Generally, cash on hand is used before borrowing.

Previous discussion has indicated the exceedingly meager incomes obtained from undeveloped cut-over farms. Chief reliance for family living was placed on sources of non-farm income by many families.

Families on Small and Undeveloped Farms Rely Heavily on Public Assistance.— Cash farm expenses exceeded cash farm receipts on the average small and undeveloped farms (fig. 6 and table 4). These farms constituted 60 percent of the farms included in the detailed farm survey. No cash contribution was made by these farms to family living, although part of the cash farm expenses were used



* Net cash from miscellaneous sources, borrowings, and cash reserves after interest and indebtedness payments.

Figure 6.- Sources of funds available in cash for family living on farms of different sizes and stages of development, five local areas of western Washington, 1939. In addition, the farms produced commodities for use by the family, such as food, fuel, and a house, which are not included in this chart (see table 16). Bar portions below the 0 line indicate the amounts by which cash farm expenses exceeded cash farm receipts, or a net farm loss that had to be deducted from other cash receipts of the family. Undeveloped farms had a total of \$572 net cash available per family but a loss of \$77 occurred in the farm business, leaving \$495 net cash available for family living. Medium-size old farms had \$516 net cash available per family, of which \$214 came from a net cash farm income.

to produce the food and fuel used on the farm by the family and in upkeep of the house. The returns to the family from farm production used in the home were more than enough to compensate for the cash expenditures made.

About 85 percent or more of the cash available for family living came from off-farm employment on these small and undeveloped farms. On the farms settled since 1929 the family income from work off the farm averaged about \$500, of which more than one-half was derived from public-work assistance. The group of small farms established before 1930 obtained an average of \$370 from off-farm employment, of which less than 40 percent was from public-works employment.

Pensions and cash relief provided the other major source of cash income, averaging from \$30 to \$80 for each of the three groups of small and undeveloped farms.

Obviously, families on small and undeveloped farms must continue to rely almost exclusively on sources of cash income other than the farm.

Families on Larger Farms Use Little Public Assistance.-- Old and new farms of medium size (farms with from 100 to 200 days of productive work) supplied an average of about \$225 net cash farm income in addition to farm privileges. Large farms established before 1930 (farms with more than 200 days of work) had an average of \$483 net cash farm income available for use in family living (table 16).

For the three groups of larger farms shown in figure 6, approximately 65 percent of the cash available for family living came from the farm itself, compared with no net cash contribution on the small and undeveloped places.

Operators of these three groups of larger farms averaged from \$137 to \$228 of income from off-farm work -- less than half the amount secured by the families on small and undeveloped farm tracts. In addition, no farms in two of the three larger groups obtained any public-work assistance, and the third group had an average of only \$33 per farm from that source. This was less than 25 percent of the assistance received by families on small old farms, and less than 13 percent of the amount obtained by families on small new farms and on undeveloped tracts. Then, too, the assistance from pensions and cash relief obtained by farmers on the larger farms was negligible.

That all families would be willing and able, through the development of their farms, to divorce themselves from public assistance and dependence on other sources of off-farm employment does not necessarily follow. But the evidence is clear that those who have developed their farms to appreciable size in terms of productive farm-labor requirements have depended little, if at all, on public assistance, and to a relatively small degree on outside employment of any kind.

Kinds of Off-Farm Employment.— Only 26 percent of the 1,051 families occupying land in the five areas had no off-farm work nor receipts from grants or pensions (table 17). Lumber industries provided from 2 to 12 months' of employment to 15 percent of the farm operators. About 6 percent of the operators worked occasionally on nearby farms; about one-half of this group obtained from $\frac{1}{2}$ to 4 months of employment. Other private and public service employment of a non-relief nature furnished employment in various amounts to 17 percent of the operators. Relief work provided employment to 24 percent of all farm families, more than 50 percent of this group having from 10 to 12 months of work in 1938.

Among the five areas there were some significant variations in employment distribution. For instance, lumber industries provided work for 30 percent of the operators in the Salkum area, and for only 6 percent in the Monroe area (table 18). Private and public service employment (other than lumber industries, neighboring farms, and relief work) was rather uniform from area to area, varying from 15 to 19 percent. Relief work, grants, and pensions probably were residual items; that is, they supplied income where it was not available from other sources. In the Duvall and Monroe areas about 50 percent of the operators received public assistance in the form of either work or direct grants.

Off-Farm Employment Not Highly Seasonal.— Seasonal distribution of available work opportunities determines to a certain degree whether or not a farm operator can carry on both farm work and off-farm labor. This is particularly true for farm enterprises that require large amounts of work during one season of the year. For dairy and poultry farming, the types in which most cut-over farmers are engaged, the farm work is spread rather uniformly over the year.

Operators on the farms established before 1950 averaged less than 20 days of outside work during the growing and harvesting season — the period from April 1 to August 31 (table 5). This employment was not enough to interfere with farm-labor requirements — probably most farmers could have done more outside work if they had the chance.

Operators of new farms averaged 42 days of outside labor from April through August, or about 8 days a month. About the same average

Table 5. - Off-farm employment of operator: days worked, seasonal distribution of work and earnings, old and new settlers, western Washington, April 1, 1938 to March 31, 1939

Item	: Old farms : with old : settlers : 1/	: Old farms : with new : settlers : 2/	: New farms : with new : settlers : 3/	: All : farms
	: <u>Days</u>	: <u>Days</u>	: <u>Days</u>	: <u>Days</u>
<u>Days worked off the farm</u> <u>by operator:</u>	:	:	:	:
April to August	: 12	: 19	: 42	: 26
September to December	: 15	: 22	: 32	: 23
January to March	: 8	: 15	: 23	: 16
Month not specified	: <u>11</u>	: <u>10</u>	: <u>14</u>	: <u>12</u>
Total for year	: 44	: 66	: 111	: 77
	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>
<u>Total earnings:</u>	:	:	:	:
Operator	: 198	: 269	: 411	: 303
Other members of family	: 54	: 76	: 49	: 55

- 1/ Farms established before 1930 with present occupant on farm before 1930.
2/ Farms established before 1930 with present occupant moving to farm in 1930 or after.
3/ Farms that apparently had no development or occupancy before 1930.

amount of outside work was obtained during the other months. Many of the operators, however, had full-time jobs and were attempting to develop the farm simultaneously. They thus could do farm work only on week-ends or before and after working hours. Slightly more than one-half of all operators who had relief work were employed approximately 12 months of the year. One frequent comment made by such workers was to the effect that it would be to the public interest to allow such workers to spend at least part of their pay period clearing and developing their own farms so they would have a chance to become partially or wholly self-supporting.

Public Assistance.— Previous discussion has indicated the average amounts of public assistance received by operators of various sizes of farms in various stages of development. These average figures conceal the variations from farm to farm.

Although the average amount per family of public assistance (including work relief, direct relief, and pensions) was \$78 for all farms established before 1930 and on which the present occupant had lived since before 1930, the amount per family for the 18 percent of families receiving assistance was \$411 (table 6). The remaining 82 percent of the families were self-supporting, either through farm income or off-farm employment of a non-relief nature. On the other hand, 54 percent of the 119 families living on new farms relied on public assistance and received from public funds an average of \$419 per family. Almost one-fourth of all occupants of new cut-over farms received more than \$500 per family through public assistance from April 1938 to March 1939.

Living Conditions

Living conditions on many of the cut-over farms of western Washington are poor. To those settlers who have moved in from semiarid areas, these poor living conditions are partly offset by an abundance of wood and water which were of major importance in their previous environment.

Family Expenditures Are Small.— Previous discussion has indicated the relative uniformity in amount of total income among all groups of farms. Occupants of farms established before 1930 averaged about the same family expenditures as did those families who had moved to cut-over farms since 1929. Average family expenditures for all settlers were \$484. The range in incomes was about the same for the three groups of farms, and for each group more farmers received incomes below the average than above. For all families the most usual expenditure was from \$300 to \$399 (fig. 7). Size of family is a factor that affects expenditures decidedly. Many of the families in the lower income groups had only one or two persons in the family, so may have been in better circumstances than a large family obtaining a much higher total family income.

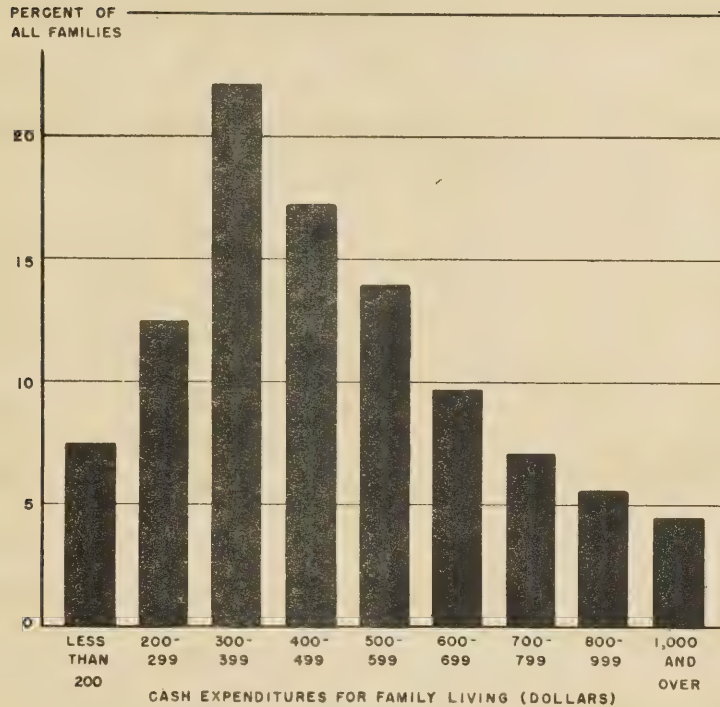


Figure 7.- Percentage of families with specified amounts of cash spent for family living, five local areas of western Washington, April 1938 to March 1939.

Table 6. - Value of public assistance received and percentage distribution of farm families by amount of public assistance received and kind of farm, five local areas of western Washington, April 1938 to March 1939

Public assistance received ^{1/}	: Old farms : with old : settlers : <u>2/</u>	: Old farms : with new : settlers : <u>2/</u>	: New farms : with new : settlers : <u>2/</u>	: All farms
Number of farms	: 111	: 37	: 119	: 267
Amount (dollars):	: <u>Percent</u>	: <u>Percent</u>	: <u>Percent</u>	: <u>Percent</u>
1 - 49	: 2	: 0	: 4	: 3
50 - 99	: 1	: 0	: 3	: 2
100 - 199	: 1	: 0	: 4	: 2
200 - 299	: 3	: 3	: 7	: 5
300 - 499	: 4	: 8	: 13	: 8
500 - 699	: 4	: 13	: 19	: 12
700 - 899	: 3	: 3	: 3	: 3
900 and over	: <u>0</u>	: <u>0</u>	: <u>1</u>	: <u>0</u>
Receiving assistance	: 18	: 27	: 54	: 35
Not receiving assistance	: <u>82</u>	: <u>73</u>	: <u>46</u>	: <u>65</u>
All farms	: 100	: 100	: 100	: 100
	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>
Average per farm for all families	: 78	: 137	: 226	: 152
Average per farm receiving assistance	: 411	: 506	: 419	: 426

^{1/} Includes Work Projects Administration, Civil Conservation Corps, National Youth Administration, local relief, old-age pensions, child relief, etc.

^{2/} See footnotes, table 5.

There were wide variations in the amount spent for family living even when family expenditures are measured on an individual person basis. About 70 percent of the families with only one or two persons per family spent from \$100 to \$250 per person for family living in 1938. Contrasted with this are the families having seven or more persons in the family, where almost 80 percent of the families spent less than \$100 per person for family living during this period (table 19). On the assumption that \$100 is the minimum amount per person that is necessary to provide a minimum adequate living, only 8 percent of the one- and two-person families fell below this minimum; 29 percent of the three- and four-person families fell below; 51 percent of the five- and six-person families; and 78 percent of the families with seven or more persons per family.

For all families in the five local areas covered by the survey, 30 percent of the total spent less than \$100 per person for family living. Because of the smaller expenditures per person in the larger families, however, the percentage of persons below the minimum was considerably greater than the percentage of families. These 30 percent of the families included 44 percent of the total number of persons. Although it is probable that the same level of living can be maintained by a larger family with a smaller expenditure per person, because some items of the budget are not directly proportional to the number of persons involved, the larger families probably were in more difficult circumstances than were most of the smaller families. This distribution indicates the need for considering size of family in a determination of relative needs and also in a determination of adequate size of farm and farm income.

An inspection of the expenditures for individual items that make up the family budget indicates that those settlers who moved in since 1929 spent slightly more for food than did occupants of old farms (table 20). This greater expenditure by the more recent settlers was partly due to slightly larger families, and to somewhat smaller production of food products on the farms. Other items of the family budget, such as clothing, housing and household operation, medical and personal expenditures, averaged approximately the same for the three groups of settlers. The only item in which there was a significant difference was in auto operation. New settlers on newly developed farms spent an average of \$95 per family for this item compared with \$66 for auto operation for those occupants of old farms who moved in before 1930. This larger expenditure on the automobile is directly associated with the greater amount of off-farm employment on these newer farms, necessitating more travel to and from work.

Farm-Produced Food Products.— Most of the occupants of cut-over farms made significant contributions to the level of family living by

growing a part of their food on the farms. The average value of farm-produced food products used in the home was \$186 for all farms, although almost 30 percent of the farms produced less than \$100 (table 7). Where large quantities of food were produced on the farm, the families were larger in size. As the quantity of farm-food production per person increased, there were smaller purchases of food. For instance, for families who grew less than \$50 of food on the farm, or an average of \$8 per person, food purchases were \$78 per person, making a total of \$86 of food consumed per person during the year. But families that produced \$300 or more of food on the farm, or about \$80 per person, made food purchases of less than \$50 per person during the year. Thus on these farms cash purchases were less and total value of food consumed per person was almost 50 percent greater than on farms that produced less than \$50 of food.

Families occupying undeveloped tracts of land produced food products for use in the home only to the extent of \$64 per family. Even on these undeveloped tracts there is an opportunity to grow a considerable part of the needed food. It is probable that this group could do much better than they have done, even though off-farm work limits the time that the operator can work around the farm.

In general, old settlers and new settlers on old farms averaged larger quantities of home-produced food than did more recent settlers on undeveloped cut-over land. Dairy and poultry products contributed by far the greatest quantity of food to the farm families (table 21). Relatively little meat was produced on the farms, partly because of the difficulty of keeping fresh meats for any length of time. Development and use of conveniently located cold-storage locker plants might enable settlers to produce more meat products for fresh use.

Housing Often Inadequate.— One indication of the level of living is the type of housing that is provided on the farm. Analysis of the housing situation on these cut-over farms indicates that 16 percent of the families were living in shack types of dwelling (generally a rough box, frame, or log structure in some cases covered by tarpaper to keep out the wind). This shack type was least numerous among older settlers, but one-fourth of the families who had moved in since 1929 and were on newly developed farms were in this kind of house (table 22). The estimated value of these dwellings averaged less than \$200. By far the greatest percentage of families lived in a frame house placed on wood or concrete blocks or on concrete or stone foundations, but with no basement. Less than one-fourth of the houses were provided with a basement and only 13 percent of all houses had basements with a concrete or stone solid foundation. This latter type of structure averaged in value from \$1,200 to \$1,900, and probably provided fairly adequate housing for the families.

Table 7.- Value of farm-produced food products used in the home, related to size of family and food purchases, five local areas of western Washington, April 1938 to March 1939

Value of farm-produced food products per family (dollars)	Families	Persons per family	Value of food produced on farm per family	Value of food per person	Produced on farm	Purchased	Total used
	<u>Number</u>	<u>Number</u>	<u>Dollars</u>		<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Less than 50	35	2.9	24	:	8	78	86
50 - 99	41	3.1	74	:	24	69	93
100 - 199	93	3.2	153	:	48	62	110
200 - 299	51	4.5	253	:	57	49	106
300 - 399	31	4.4	340	:	78	46	124
400 and over	<u>16</u>	<u>6.3</u>	<u>505</u>	:	<u>80</u>	<u>47</u>	<u>127</u>
All groups, total or average	267	3.7	186	:	50	58	108

The new settlers were living in considerably cheaper structures than the old ones, and the average number of rooms per house was 3.8 compared with 5.5 for houses on farms developed before 1930.

Housing on many cut-over farms appears to be inadequate, notwithstanding the availability of relatively inexpensive lumber. It is inadequate even in relation to the mild climate. Western Washington is one of the chief lumber-producing areas of the United States, so it is possible to build a good frame house for much less than would be possible in most other places. The climate is usually mild, but it is necessary to have a tightly constructed house because of the heavy winter rains.

Home Conveniences.- Nearness of most of these cut-over areas to urban districts makes it possible to obtain electric service at low rates. Of the settlers who had moved in since 1929, 52 percent had electric lights. The percentage of recent settlers with other home conveniences was as follows: running water in the house, 21 percent; indoor toilets, 11 percent; electric refrigerators, 11 percent; electric stoves, 3 percent; radios, 72 percent; telephones, 3 percent; washing machines, 50 percent; and furnaces, 2 percent. These percentages compare rather favorably with home conveniences of farm families in most other parts of the country, although even here much remains to be accomplished before many families can be considered to have adequate home facilities.

Social Services.- Roads and schools are generally adequate in these areas, unless the settler selects a farm in a "shoestring valley" or some other isolated spot.

Because gravel deposits are convenient to most of the Puget Sound district, construction of lateral roads is relatively inexpensive. Rainfall is heavy during the winter, but the upland soils drain quickly so transportation between the farms and urban areas usually is unimpeded except by an occasional heavy snow storm, perhaps once in several years.

Non-Material Advantages Important.- Western Washington is noted for its mild, temperate climate, and is rich in scenery. Flowers and shrubs grow so profusely that it is easy to beautify the farm homes and grounds. Recreational facilities are convenient to all areas. Although these factors are intangible and cannot be substituted for food, clothing, and shelter, they do have a great appeal to many people and partially compensate for a lack of some of the material advantages.

Records obtained from these farmers on cut-over lands indicate that many of them are having a struggle to provide the necessities of living. But, on the other hand, most of them say they like western

Washington as a place to live. Most of the interviewed people were satisfied with the area, and indicated their preference for farming here as a way of life, if they can provide their families with a minimum adequate income, either through off-farm work or through the development of the cut-over farms to the point where they will provide the necessary income.

RESOURCES AND DEVELOPMENT

Financial Position and Progress

Most of the families who settled between 1930 and 1938 in these sample areas had relatively small resources. Almost one-third of the 156 families had a net worth at time of settlement of less than \$500; an additional 28 percent had net worths of \$500 to \$1,500; and 36 percent had between \$1,500 and \$5,000; and only 5 percent had net worths of more than \$5,000 (table 8).

Settlers Have Progressed Slowly.— Financial statement, as of March 31, 1939, as given by the settlers, indicates that most of them have made some improvement, though a few have sustained losses. Only 12 percent reported a net worth less than \$500. Almost one-half reported a net worth over \$2,500, compared with less than one-fourth in that category at time of settlement. This comparison is misleading, however, as there was a tendency to value land and buildings higher than the original purchase price, even though no improvements had been made.

It is extremely difficult to measure land values under any circumstances, and when the original purchase includes buildings and improvements, (as many of them did), to measure the change in value becomes almost impossible. Perhaps a more realistic indication of progress is the change in financial position from the beginning to the end of the most recent year on record, rather than from the date of settlement to the present time. Land values are then held constant, except for actual land clearing, and buildings are valued the same at the beginning and end of the period, minus a depreciation charge for 1 year based on the probable length of life of the improvements. Such a comparison indicates that the group of old farms included in the survey had a small loss in net worth of \$48 per farm from April 1, 1938, to March 31, 1939. The new farms and undeveloped tracts had an increase in net worth of \$96 per farm, which represents a small amount of land clearing and some improvement to buildings and equipment. Occupants of old farms (those established before 1930) did little clearing, and the loss represents mostly depreciation of buildings. Income was apparently just about sufficient to offset expenses of farm operation and family living. Wide variations occur, of course, among farms of different sizes and among individuals with varying opportunities for work off the farm.

Table 8. - Distribution of recent settlers by net worth at time of settlement and on March 31, 1939, five local areas of western Washington ^{1/}

Net worth (dollars)	At time of settlement :		March 31, 1939	
	Farms	Percentage	Farms	Percentage
	Number	Percent	Number	Percent
Less than 0	0	0	3	2
0 - 99	10	6	1	1
100 - 249	15	10	8	5
250 - 499	24	15	7	4
500 - 999	23	15	19	12
1,000 - 1,499	21	13	17	11
1,500 - 2,499	28	18	28	18
2,500 - 4,999	28	18	46	30
5,000 - 9,999	6	4	20	13
10,000 and over	<u>1</u>	<u>1</u>	<u>7</u>	<u>4</u>
All farms	156	100	156	100

^{1/} All those who moved into the areas in 1930 and later years.

Shift from Liquid to Fixed Assets After Settlement.- The various types of assets and their amounts, and the amount of liabilities at the time of settlement and on March 31, 1939, are shown in table 9 for those 119 settlers who moved onto land that had little or no clearing before the time of settlement (many such tracts included buildings constructed by previous occupants), and for those 37 recent settlers who acquired previously developed farms.

The most important asset at the time of settlement was cash, which averaged \$572 for all settlers on new farms and \$1,087 for new settlers who acquired developed farms. Total farm property at the time of settlement before the purchase of land (except for a few who acquired their land several years before settlement) was valued at \$336 for settlers on new farms. About one-half of this value was farm buildings and machinery. Liabilities amounted to \$68, and total assets were valued at \$1,416, leaving a net worth at time of settlement of \$1,348. New settlers on old farms had about double the amount of assets and net worth of those who acquired undeveloped farms.

By the end of March 1939 the average net worth of the settlers on new farms had increased to \$2,466, an increase of \$1,118, though there was a wide variation from farm to farm, depending upon the length of settlement, available opportunities for employment, and many other factors. Farm assets were 81 percent of total assets in March 1939, but only 24 percent at time of settlement. The value of household goods had increased by \$100, but cash, accounts receivable, and other non-farm assets had decreased from \$923 to \$319. A similar situation existed for the 37 new settlers on old farms, though they had proportionately greater amounts invested in land and livestock. Cash decreased about \$900. In other words, the settlers had converted liquid assets into property. Liabilities increased markedly; most of them were contracts or mortgages for land purchases.

Land Purchases by Recent Settlers.- Most of the settlers who moved into the areas studied obtained tracts of land having from 20 to 45 acres of stump, brush, and second-growth timberland. Approximately 65 percent of the families who had settled in the areas since 1929 and from whom detailed information was obtained had secured farms with less than 3 acres cleared at the time of settlement. About 30 percent of the farms had from 3 to 30 acres cleared at the time of settlement, and only 5 percent had more than 30 acres cleared. Practically all settlers, therefore, were faced with the task of clearing a considerable tract if they hoped to get their entire living from the land they bought.

Of the group of recent settlers, 60 bought land on which there were no buildings, though a small extent of clearing may have been

Table 9.- Average assets and liabilities of recent settlers on new farms and on old farms, at time of settlement and on March 31, 1939, five local areas of western Washington

Item	At time of settlement		On March 31, 1939	
	New	New	New	New
	settlers	settlers	settlers	settlers
	on	on	on	on
	new farms	old farms	new farms	old farms
<u>Number of farms</u>	119	37	119	37
<u>Assets:</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Land	94	378	901	2,339
Buildings and machinery	157	276	1,146	2,077
Livestock	62	147	229	779
Other farm property	23	26	7	22
Total farm property	336	827	2,283	5,217
Household goods	152	335	253	499
Cash and accounts receivable	572	1,087	149	197
All other assets	356	561	170	372
Total assets	<u>1,416</u>	<u>2,810</u>	<u>2,855</u>	<u>6,285</u>
<u>Liabilities:</u>				
Mortgages, liens, notes	57	219	288	1,348
Accounts payable	9	—	92	41
Delinquent interest and taxes	1	11	8	32
Other liabilities	1	—	1	2
Total liabilities	<u>68</u>	<u>230</u>	<u>389</u>	<u>1,423</u>
<u>Net worth</u>	1,348	2,580	2,466	4,862

done. These 60 land purchases averaged 46 acres per farm at an average purchase price of \$15 per acre. There was a wide range in price among the different areas and among farms within the same area. Most purchases were made at from \$10 to \$30 per acre for cut-over land with no clearing done.

Very few of the settlers paid cash for their land. Most of them purchased on a contract, with from 10 to 20 percent of the purchase price as a down payment, the balance payable in installments over a period usually from 5 to 10 years. The interest rate was 6 percent in most cases, though 4 percent was a common rate in the Yacolt area in Clark County.

At the time of the study, beginning in April 1939, almost 45 percent of the 119 new settlers on farms not developed at the time of purchase had no liabilities on land purchases represented by contracts, real estate mortgages or chattels, and notes. An additional 20 percent of the settlers on these newly developed farms had less than \$250 of such liabilities. Thus a total of two-thirds of all these settlers had little or no indebtedness. The other one-third had indebtedness ranging from \$250 to almost \$2,500 in a few cases. Some of this group may have difficulty meeting debt payments and may find it difficult to add additional debt burdens for expansion of operations.

Land Clearing Progress and Costs

Much of the upland areas, on which most settlement is taking place, was originally covered with a dense forest, largely Douglas fir. Many of the stumps remaining are from 6 to 8 feet or more in diameter and are extremely difficult and expensive to remove. These stumps decay very slowly so that little is gained by waiting. Many settlers clear the brush from among the stumps and use stumpland for pasture, or clear the smaller stumps out and plow around the larger ones (fig. 8), but this practice is inefficient if machines are used in farming.

Land Clearing a Slow Process.— Clearing has progressed slowly on most farms, not only on recently established farms but on the older ones as well. Almost 30 percent of the farms occupied by the present families for 19 or more years had less than 5 acres cleared since settlement by the present occupants (table 10). Almost 50 percent of that group had 10 or more acres cleared. With shorter lengths of settlement the amount cleared was less and less. Over 50 percent of those settled from 1932 to 1935, and 80 percent of those settled from 1936 to 1938 had less than 2 acres cleared since settlement.



Figure 8.- Stumps are large and difficult to remove. The farm buildings are almost hidden by the stumps in the foreground.

The normal rate of clearing for the 156 settlers studied in detail and who had moved in since 1929 was from one-fourth to three-fourths of an acre per year for those who had done some clearing. Nearly one-third of this group of farmers had done no clearing at all since settlement (fig. 9). Fewer than 30 percent had cleared more than 1 acre per year, and only 2 recent settlers out of the 156 had succeeded in clearing 5 or more acres annually.

A number of the settlers obtained some land already cleared; therefore, the total acreage cleared in the areas was slightly more than that indicated in table 10. Of the 1,051 farms occupied in the five areas studied, 87 percent were larger than 10 acres in size and 70 percent were larger than 20 acres. However, one-third of the occupied farms had less than 2 acres cleared in 1939; over one-half had less than 5 acres cleared; and three-fourths had less than 10 acres cleared.

Obviously, relatively few farms had enough cleared acreage for a full-time farm, and at present and past rates of clearing, few of the present occupants will ever have enough cleared acres for a full-time farming unit, even assuming that the land selected for clearing is sufficiently productive. Most settlers on these lands of necessity must continue to depend upon off-farm sources of income, or they must find some way of speeding up the clearing rate if they are to have an adequate acreage of cleared land within a reasonable length of time.

Land Clearing Costs Are High.— Most land clearing in the past has been done by slow, laborious methods by which settlers on cut-over lands have grubbed out less than an acre of stumps a year. These methods include burning, grubbing, blasting, and use of stump pullers powered with horses, tractors, or "donkeys" (this donkey is a gas or steam engine geared to a winch and mounted on a sled made of heavy logs or timbers so it can be moved).

The costs of these methods vary greatly, depending upon such factors as size and kind of stumps, number of stumps per acre, and type of soil. All involve large amounts of labor which, if hired, increases the cost of clearing to a high figure, or if done by the farmer distinctly limits the acreage he can clear. Farmers' estimates of costs of clearing these lands generally are from \$150 to \$250 per acre. These costs are reflected in farmers' estimates of value of cleared land, which averaged approximately \$200 per acre.

On the basis of income, however, such valuations on these upland cleared lands probably cannot be supported, inasmuch as the major use for cleared land, aside from farmstead and garden, is for hay, which yields on the average less than 2 tons per acre.

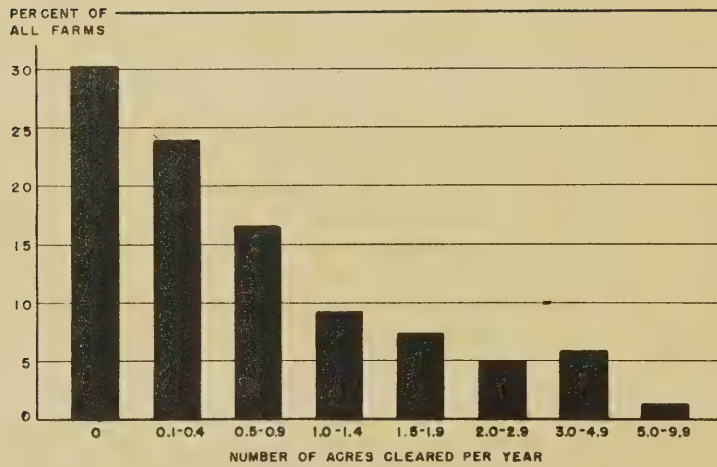


Figure 9.- Average number of acres cleared per year since settlement by 156 new settlers in five local areas of western Washington.

The conclusion is obvious that much cheaper methods of clearing must be used than those prevailing during the past. Many persons believe the answer lies in the widespread use of the bulldozer method of clearing, which consists of the use of a heavy tractor to which is attached a large blade for pushing out roots and stumps. This machine method has been developed within recent years and, supplemented with some blasting, apparently has brought a material reduction in costs.

Studies of clearing costs conducted by the Bureau of Agricultural Economics in 1939 7/ indicate that most cut-over lands in western Washington can be cleared by machines at a cash cost to the farmer of \$20 to \$80 an acre, depending on the type of soil and the density, size, kind, and age of stumps.

Data obtained from 43 contract jobs aggregating about 550 acres of clearing in western Washington are summarized in table 11 by difficulty of the work.

The jobs were rated as to difficulty according to the number of stumps of blasting size per acre. Two-thirds of the jobs were in the "easy" and "medium" classes in which the total cash cost, including burning, ranged from \$30 to \$75 an acre. Clearing similar to the most difficult of the jobs listed is reported to have cost \$200 to \$250 or more by older methods, whereas the most expensive machine job reported was \$105 per acre. There probably are many acres of cut-over land even more difficult to clear than any included in the study, but land owners are loath to pay for such difficult and expensive clearing jobs.

Cash Costs Difficult to Meet.— Machine clearing requires a cash outlay which most settlers are unable to afford. Consequently, they either do no clearing or use old-fashioned methods requiring little cash but much labor, and gradually work the stumps out of a half-acre or so a year. The result is that many years elapse before enough acreage is cleared to enable the prospective farmer to make his entire living from the farm. On the basis of observed clearing rates, most settlers would require 40 years to clear 20 acres of land and even then would hardly have enough cleared land for a full-time farming business even if supplemented by uncleared pasture land.

Financial Aid for Land Clearing

Previous discussion has indicated the close relation between high public-relief assistance costs and the absence of cleared land and livestock enterprises on the cut-over farms. This public assistance averaged over \$400 per family receiving assistance and was extended to

7/ Made by W.W. Troxell and Harry J. Voth of that Bureau in the U.S. Dept. of Agric.

Table 10.- Percentage of farms settled at various periods, having specified amounts of land cleared since settlement, all farms in five local areas of western Washington, 1939

Number of farms and land cleared since settlement by present occupant	Farms settled by present occupant					
	1920	1927	1931	1935	1938	All farms
	Before	to	to	to	to	
	1920	1927	1931	1935	1938	
Number of farms ^{1/}	173	197	128	196	354	1,048
Acres cleared:	Percent	Percent	Percent	Percent	Percent	Percent
None	2.9	11.2	14.1	21.4	49.9	25.2
0.1 - 1.9	4.0	13.7	26.6	30.1	30.8	22.5
2.0 - 4.9	22.0	30.4	25.0	31.7	13.8	23.0
5.0 - 9.9	22.5	20.8	17.2	11.2	4.0	13.2
10.0 - 19.9	27.8	15.7	14.8	3.6	.6	10.2
20.0 - 39.9	15.6	6.1	2.3	1.5	.6	4.5
40.0 or more	5.2	2.1	.0	.5	.3	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

^{1/} Information on land clearing was not available for 3 of the 1,051 farms included in the study.

Table 11.- Cost per acre for land clearing by the bulldozer method in western Washington, 1939 ^{1/}

Type of work	Number of jobs	Average cost of clearing per acre			
		Bulldozer work	Blasting, including labor	Miscellaneous	Total ^{2/}
		Dollars	Dollars	Dollars	Dollars
Very easy	7	13	2	3	18
Easy	16	27	9	3	39
Medium	14	34	17	6	57
Difficult	6	52	24	4	80

^{1/} From unpublished material of the Bureau of Agricultural Economics, U.S. Dept. of Agric.

^{2/} Does not include cost of burning the stumps and debris, which usually is done by the farmer.

35 percent of the 267 farmers included in the detailed survey. Those farmers with 100 or more productive man work units on their farms required no public assistance whatsoever, except in a few cases. These farms were larger by at least 15 acres of cleared land, and at least 12 acres of seeded stump pasture, than were the small or undeveloped tracts, and in addition had from 8 to 15 more productive animal units than the smaller farms. These greater numbers of cleared acres and productive livestock on the larger farms enabled the operators to make a living without receiving public assistance, though many received supplemental income from off the farm. Even so, this non-relief off-farm income was less than that received by operators of small and undeveloped tracts who, in addition, received appreciable income from public-relief assistance.

These data indicate that it may be less expensive in the long run to assist settlers to increase the size of their cleared acreage and their livestock numbers. Such a conclusion assumes that the operators of small and undeveloped tracts are capable and desirous of increasing the effective size of their farms and that the quality of available uncleared land on their farms or nearby is equal to that of land on the larger farms.

Soil Quality Important.-- Although soil type varies widely and undoubtedly is too poor on some farms to warrant any investment for clearing, most of these small and undeveloped tracts apparently have at least part of their farms of soil similar to that of the larger farms. (Small and large as used here refer to cleared acreages rather than to total area of the farm.) The soil quality on each farm must be considered separately and carefully by competent authorities before any decision to provide assistance for clearing is reached.

Emphasis should be clearly placed upon the necessity for careful selection of the land to be cleared. Some of the upland gravelly soils of western Washington are not worth clearing even if it could be done at a nominal cost. If public credit is advanced for clearing activities, either directly or indirectly, the agency advancing such credit should assume responsibility for seeing that clearing is done only on the better available lands. Otherwise, the settler is harmed rather than benefited and the agency is likely to be discredited in the eyes of the public (fig. 10).

Alternatives of Policy.-- Provision of long-term credit for land clearing and shorter term credit for buying livestock and equipment, and for operations should permit the successful establishment of many farms in western Washington. On irrigated lands the greater part of the development cost is provided by a governmental agency which provides irrigation works and does not require repayment for

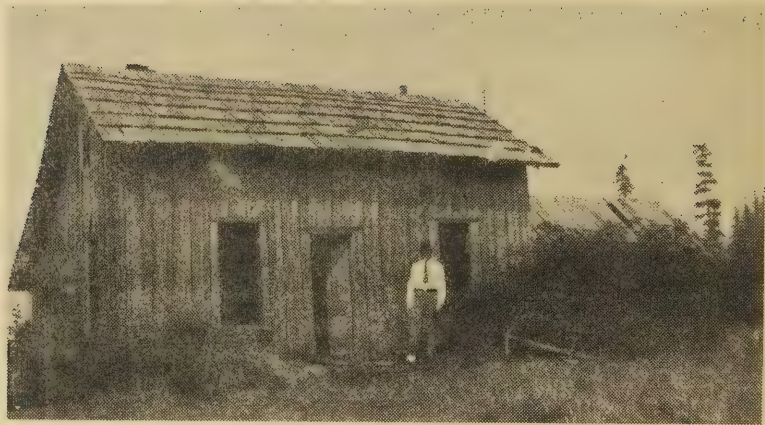


Figure 10.- Location of this farm on poor soil in an area where part-time employment was not available led to abandonment..

the first few years of development. Experience on these projects indicates the need for a period of at least 4 or 5 years during which no principal or interest charges are paid. Settlement and development are fully as difficult on cut-over lands as on irrigated lands, if not more difficult.

Even though public credit is advanced for clearing, a continuation of relief programs through work relief or grants may be necessary to provide for current living expenses until clearing and development of the farm are done, which will take a year or two at best. Where opportunities for remunerative work off the farm are available at certain periods, the need for such assistance will be decreased. Eventual substitution of farm income for relief assistance undoubtedly is in the interest of public welfare.

Several possibilities are available for assisting settlers to become more self-supporting through development of their cut-over farms:

(1) Cooperation of a group of nearby farmers in buying the equipment necessary to carry on large-scale machine methods of clearing. This involves an investment of \$6,000 to \$12,000 and is beyond the resources of most settlers. A cooperative clearing association has been organized in at least one community with a loan from the Farm Security Administration for buying the necessary equipment. This cooperative apparently has had good results. Loans for purchase of equipment probably would have to be supplemented by loans to individuals to pay for hiring the equipment from the cooperative.

(2) Public or private purchase and operation of the clearing machinery at definitely scheduled rates on job contracts, with long-term public credit provided to the settler for payment of the job. Cases have been reported in which county governments have made clearing machinery available to settlers; however, little or no credit was available to the settler for purchase of the service, so it has been done mainly by those with more resources.

A variation of this method would be to provide public credit to farmers for land clearing by private contractors. The element of risk involved in obtaining sufficient clearing jobs to keep the machinery fully employed has helped to keep rates relatively high, when the work is done by private operators. Where publicly financed, this risk would be assumed by a larger group of people and would permit more continuous operation of the bulldozer and better scheduling of the clearing jobs.

(3) Large-scale land clearing, financed and operated by a public agency. This method would be similar to that used on irrigation reclamation projects. In this case, the land would be cleared in large blocks of several hundred or several thousand acres, rather than as parts of farms. Because of the possibility of using more powerful machinery, increasing efficiency of the operations, and eliminating the movement of equipment from one farm to another, the rates for clearing should be the lowest. The clearing would be done by use of public funds, with repayment of the cost by the settler on a long-term contract with a low interest rate. Establishment of public policy similar to that involved in development of irrigation projects would provide a 40-year repayment with interest.

The first two alternatives would provide for clearing parts of farms already established, and for the possibility of rehabilitation in place. The third alternative would provide for the development of large areas, which in many cases would result in the establishment of new farms.

In any of these methods where public or private credit is provided, stipulation should be made for close supervision of the loan, particularly to insure that good-quality soils are cleared in acreages that will provide for an approximate full-time farming unit, unless there is reasonable certainty that part-time employment will be available.

Probable Needs for Development

Major Reliance on Dairy and Poultry.— Dairy and poultry enterprises are by far the most important sources of income in these cut-over areas. On 82 percent of the farms with more than 100 P.M.W.U.'s, the major sources of farm income were dairy and poultry products. Very few farms received their chief income from crops. This emphasis on dairy and poultry production results largely from natural conditions of the area, though it is partially influenced by market outlets. The adaptability of these two enterprises indicates that they will continue to be the main sources of farm income.

Farms on which at least four dairy cows were milked in 1938, or which had 200 laying hens, were studied in detail to learn the problems and possibilities of dairy and poultry farming in the upland cut-over areas. These farms were classified as specialized dairy farms or poultry farms if 60 percent or more of total farm receipts came from dairy or poultry sources respectively.

Dairy Farms Have More Cropland.— Dairy farms averaged more acres of all land and of cropland than did poultry farms (table 12). On dairy farms the land in farms and in cropland was directly

Table 12.- Summary of farm organization, expenses, and income on specialized dairy and poultry farms of specified sizes, five local areas of western Washington
April 1938 to March 1939

Item	Dairy farms			Poultry farms		
	4 or 5 cows milked	6 to 10 cows milked	11 or more cows milked	200- 499 hens	500- 899 hens	900 or more hens
Number of farms	22	32	19	12	10	10
Land use:	Acres	Acres	Acres	Acres	Acres	Acres
Land in farm	58.9	84.8	144.7	45.5	34.4	34.7
Cropland	11.1	16.4	35.5	7.2	9.0	7.2
Hay	8.2	12.5	26.8	6.5	5.8	5.7
Cleared pasture ^{1/}	19.8	24.4	75.8	13.2	13.1	3.4
Livestock:	Number	Number	Number	Number	Number	Number
Cows milked	4.7	7.7	14.6	2.6	3.1	2.2
Hens	52	26	38	328	733	1,257
Farm receipts:	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Crops, including inventory increase	10	18	37	5	11	48
Livestock	64	116	210	48	281	340
Livestock products	345	538	897	872	1,883	3,041
Miscellaneous	12	46	33	14	12	21
Total receipts	<u>431</u>	<u>718</u>	<u>1,177</u>	<u>939</u>	<u>2,187</u>	<u>3,450</u>
Farm expenses:						
Hired labor	16	20	38	6	13	131
Seed and feed	200	231	318	565	1,404	2,163
Gas, oil, grease	16	31	45	12	27	66
Taxes and insurance	34	34	73	21	42	34
Building and machinery expense ^{2/}	147	188	239	129	171	342
All other expenses	43	77	157	52	101	117
Total expenses	<u>456</u>	<u>581</u>	<u>870</u>	<u>785</u>	<u>1,758</u>	<u>2,853</u>
Family farm income	-25	137	307	154	429	597
Farm investment:						
Land	2,468	2,781	5,899	1,933	1,868	2,062
Buildings and machinery	1,945	2,251	3,449	1,853	3,375	3,872
Livestock	507	755	1,375	399	815	1,201
Other	1	7	29	15	24	88
Total investment	4,921	5,794	10,752	4,200	6,082	7,223

^{1/} Mostly surface-cleared; that is, brush removed, but not stumps.

^{2/} Includes depreciation.

proportional to the number of cows milked. For instance, dairy farms with 4 or 5 cows had 11 acres of cropland, those with 6 to 10 cows had slightly over 16 acres, and those with 11 or more cows averaged 35.5 acres of cropland. On the other hand, poultry farms of different numbers of hens had practically the same acreages of land in farms and in cropland for all size groups. Because the areas are not well adapted to grain production, most feed for poultry is purchased and there is thus less necessity for large acreages of cropland.

Most of the cropland on all farms was used to produce hay. Even on poultry farms, which usually had two or three cows, most of the 7 to 9 acres of cropland was used to produce hay.

Feed Purchases High on Poultry Farms.- Dairy farms had large acreages of pasture, mostly on stumpland, and produced most or all of the hay fed to livestock. Feed purchases, therefore, were not large compared with those on poultry farms. An average of about \$30 per cow milked was spent for feed.

Poultry farms bought large quantities of feed. For instance, the large poultry farms, averaging 1,257 hens, bought \$2,163 of feed and seed, compared with \$318 on the large dairy farms, averaging 15 cows. On all sized farms feed was the largest single item of farm expense.

Although expenses were much higher on the poultry farms than on the dairy farms, receipts likewise were much greater. Net farm income to the family (receipts minus expenses, including depreciation) was higher on the poultry farms.

Milk production per cow and egg production per hen materially affect the incomes received. Those dairy farmers with 11 or more cows who had milk sales of more than 6,000 pounds per cow had farm incomes of almost \$600, whereas the average milk sales per cow for the entire group of farms with 11 or more cows was about 4,500 pounds, and the farm incomes averaged slightly higher than \$300 per farm.

Relative Advantage of Dairy and Poultry.- Differences in income in favor of poultry cannot be considered significant because of peculiar circumstances in the 1938-39 year and because of differing situations on individual farms.

The price situation pertaining to egg production in western Washington was more favorable in 1938-39 than for the preceding 7 or 8 years. Although egg prices were slightly lower than in 1935 and 1936, feed prices were much lower, with the result that the egg-feed ratio was unusually favorable 8/. Prices for butterfat, on the other

hand, were much lower in 1938 than during the three preceding years, and, in addition, 1938 was a dry year in western Washington, causing slightly lower yields of hay and probably considerably less pasture, with a resultant decrease in milk flow and increased use of purchased feed.

Under these circumstances, it is apparent that the favorable incomes of poultry farming over dairy farming in 1938 did not represent the usual situation. The advantage of being in one or the other enterprise probably lies in individual considerations of the farm and the farmer, rather than in any natural advantage of either.

Dairy farming requires less cash operating costs and is less influenced by fluctuations in prices for feed because much of the feed is produced on the farm as hay and pasture. Successful poultry farming, on the other hand, depends to a major degree upon a favorable price relationship between eggs and feed. Income is therefore more subject to changing prices. Poultry farming can be entered into more easily because it takes less time and less capital to build up a flock of hens than it does to build up a herd of cows. This partly explains why relatively more of the newer settlers have poultry. Moreover, less cleared land is required for poultry, and soil quality is not so important. In order to engage in dairy farming, more cleared acreage and more pasture are needed than for poultry farming.

More of the older settlers are engaged in dairying. Cows permit use of uncleared pasture land and more effective utilization of cleared land than poultry, with less dependence upon purchased feed. Farm incomes may thus be expected to be more stable from year to year.

Minimum Requirements for a Full-Time Dairy Farm.- On the basis of experience in the areas, a minimum-sized dairy herd of 11 or 12 cows appears to be necessary to provide a minimum family income without dependence on off-farm employment. Maintenance of such a herd would require about 30 acres of cleared land for hay production, garden, and miscellaneous crops, and an additional 30 acres of land cleared of brush but not of stumps, and seeded to pasture. An average 80-acre tract would provide these requirements. Such an operation, including some minor enterprises, like a small flock of poultry and a few hogs, would provide from \$400 to \$500 of family income if the farmer can obtain an average of 5,500 pounds of milk sales per cow at slightly higher prices than were received in 1938. In addition to the farm income, food products and fuel would be provided for the family. Probable income and expense of such a farm business are shown in table 13, based on data obtained in this study and assumptions of good farm-management practices.

Even with the size of business indicated and assumptions of a slightly higher price for milk than was received in 1938 and a slightly

Table 13.- Farm budget for a minimum family-type dairy farm on upland cut-over areas of western Washington

<u>Land Use</u>		<u>Farm Investment Values</u>	
	<u>Acres</u>		<u>Dollars</u>
Cropland	30	Land (cropland @ \$100, other	
Cut-over pasture	30	land @ \$10)	3,500
Woodlot	18	Dwelling	1,250
Farmstead and roads	2	Other buildings	1,100
		Fences, water supply, etc.	400
Total	80	Machinery and equipment	700
		Livestock	1,300
		Total	8,250

<u>Organization</u>		<u>Farm Receipts and Expenses</u>	
	<u>Acres</u>		<u>Dollars</u>
		Farm receipts:	
Hay	22.5	Milk sales (5,500 lbs. per cow	
Grain	5.0	@ \$1.40 per cwt.)	924
Garden and miscellaneous	2.5	Veal (7 @ \$7.50 per head)	52
		Cull cows (2, 1,000 lbs. ea.,	
Total cropland	30.0	@ \$4 per cwt.)	80
		Miscellaneous (eggs, hogs,	
		and garden)	200
	<u>Number</u>	Total receipts	1,256
Dairy cows	12		
Heifers and calves	8		
Hens	100	Farm expenses:	
Hogs	5	Hired labor	30
Horses	2	Custom hire	15
		Gas and oil (farm use)	40
		Seed and fertilizer	15
		Feed purchases	300
		Breeding and veterinary fees	50
		Repairs (bldgs., mach. & equip.)	50
		Taxes, insurance, & licenses	80
		Miscellaneous	30
		Total cash expenses	610
		Depreciation	160
		Total expenses	770

<u>Income Summary</u>			
	<u>Dollars</u>		
Family cash farm income	646		
Family farm income (after depreciation)	486		
Production for family use:			
Value farm-raised food	250		
Value farm-raised fuel	40		
Rental value of dwelling	125		
Total non-cash contribution	415		
Family farm earnings	901		

higher milk production^{9/} than was received that year by cut-over land farmers, the family cash farm income is only \$646, and after an allowance for depreciation is made, it is only \$486. Such an income, however, even after allowing for depreciation, would provide the family with more cash than was spent for family living in 1938 by one-half of the families on cut-over farms. Repayment of any indebtedness would necessarily be made by one of the following methods: (1) decreasing the amount spent for family living below the \$486 cash available, (2) use of the depreciation allowance (which could not be done continuously), or (3) earning money off the farm by other members of the family.

The budget presented indicates the possibilities under good management. A farmer who devotes full time to his farm can care for two or three cows in addition to those shown, if he organizes his work. This would increase the income indicated, but would require additional cleared land for this extra livestock. Small amounts of off-farm employment during slack seasons are available to many farmers to supplement their farm incomes.

Credit Needed for Development.- Most of the recent settlers and many of the older ones have been unable or unwilling to develop farming businesses to the level of the minimum requirements indicated. Some of these undoubtedly would not care to go into dairying and would prefer to engage in poultry raising or other enterprises. Other settlers will continue to prefer part-time employment and will not be interested in, or capable of, developing a full-time farming operation.

On the assumption that a considerable proportion of the settlers presently occupying undeveloped cut-over farms are willing and able to undertake the operation of a minimum full-time dairy farm, it is possible to indicate in general terms the credit requirements for such an effort.

Most farms would require the clearing of from 25 to 30 acres of the better stumpland for crops. At an average cash cost of \$50 an acre for clearing by the bulldozer method, this would necessitate an expenditure of \$1,500 for 30 acres, the burning of stumps and debris to be done by the farmer at little cash cost. In addition, provision would need to be made for expansion of buildings and acquirement of more equipment and livestock. On the basis of the assets in 1939 of the 119 recent settlers on new farms, the financing necessary to bring such settlers up to the minimum-sized farm is as follows: for clearing 30 acres of stumpland, \$1,500; for additions to buildings and additional

^{9/} This assumption of an expected higher milk production appears to be valid because of the dry season of 1938. The figure used is slightly below the estimated average milk production for the State of Washington as reported by the Bureau of Agricultural Economics.

machinery and equipment, \$1,500; and for purchase of livestock, \$750; or a total of \$3,750 of investment credit. These are minimum amounts based on the supposition that the settler could do a considerable part of the work of building and construction. For instance, the materials for a dwelling valued at \$1,250 could be bought for about \$600 and the farmer could do most of the construction himself.

Probably some operating credit would be necessary for the first few years, and any public or private agency making such loans would be required to service the loan carefully to see that only the best land was cleared and that good farm-management practices were followed.

In view of the expected income of about \$650 cash and \$485 after allowance for depreciation, the maximum sum that could be spared by the family to service the loan would be from \$100 to \$150 per year. A long-time loan of 35 to 40 years with low interest payments would be necessary. Frank recognition that a subsidy would be necessary in some cases should not necessarily discourage such a program, inasmuch as public funds are now being used to the extent of more than \$400 per year for approximately 50 percent of the recent settlers. The rehabilitation of these farmers in place, where feasible, should permit the substitution of farm income for income now received from public-relief funds. The farm income provided by such an operation is small and is not to be obtained easily, but it provides properly qualified settlers opportunity to become independent of public relief and should give them relatively good security for living and farm development.

Additional Research and Extension Assistance Needed.— Several special problems of the cut-over areas remain to be solved before full development of the general area can be attained. The problem of the encroachment of bracken fern on pastures is one. Until some solution is found, the carrying capacities of cut-over land pastures will not be fully realized. Increasing the production of hay is another real problem. Red clover yields well but is not adapted to all soils. The most common grass, vetch, and oat hays yield well, but hay quality is not as high as straight legume hays. The expansion of alfalfa acreage of varieties adapted to the soils and climatic conditions would be an noteworthy step forward.

Many farmers reported losses of dairy cows in some years from red water disease (Bacillary hemoglobinuria). More widespread knowledge of controls for this disease is necessary. Herd improvement through breeding and selection of cows would materially assist many of these farmers. Many other day-to-day problems with which they are faced can be readily solved through closer attention by agricultural production specialists in the various lines of activity, and by making known to these farmers the services that are provided by the various agricultural agencies, both State and Federal.

The family incomes of many of these cut-over farms could be supplemented by more careful attention to the woodlot. On most of these farms little income other than the family fuel supply is now obtained from wood products, even though a large acreage on many farms is in second-growth timber. The possibilities of developing farmer cooperative associations for collecting and marketing commercial volumes of pulp and timber products require investigation. Some efforts have been made in this direction. Further attention to farm-forestry enterprises over a period of years should give an additional supplementary source of income on many cut-over farms.

That the farms in cut-over areas can contribute materially to family living through farm-produced foods cannot be over-emphasized. Family gardens, fruits, dairy and poultry products, and farm-produced meats all can be produced readily. Closer attention by the settlers to this opportunity will increase the quality and quantity of the family diet and leave more cash for other commodities.

SUPPLEMENTARY TABLES

Table 14.- Location of recent settler families before settlement on present farm
five local areas of western Washington, 1939 1/

Previous location	: Yacolt : area : Percent	: Salkum : area : Percent	: Duvall : area : Percent	: Monroe : area : Percent	: Getchell : area : Percent	: All : areas : Percent
Local county	: 14.4	49.5	2.1	37.2	46.4	31.2
Other western Washington counties	: 16.8	18.2	51.5	13.4	10.9	20.2
Eastern Washington counties	: 4.0	1.0	6.2	6.1	1.4	3.9
Total State of Washington	: 35.2	68.7	59.8	56.7	58.7	55.3
Oregon	: 18.4	2.0	2.1	2.4	3.6	5.8
California	: 9.6	2.0	6.2	1.2	5.8	4.8
Intermountain States <u>2/</u>	: 3.2	1.0	4.1	2.4	1.5	2.4
Northern Great Plains States <u>3/</u>	: 19.2	11.1	14.4	15.9	9.4	14.2
Southern Great Plains States <u>4/</u>	: 4.8	6.1	6.2	12.8	3.6	7.0
All other States	: 6.4	7.1	3.1	3.7	13.1	6.6
Canada	: ---	---	3.1	2.4	2.9	1.9
Alaska	: ---	---	---	.6	---	.1
Foreign countries	: ---	---	---	---	.7	.1
Previous location not reported	: 3.2	2.0	1.0	1.9	.7	1.8
All locations	: 100.0	100.0	100.0	100.0	100.0	100.0
	: <u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
Number of recent settlers	: 125	99	97	164	138	623
Number settled before 1930	: 59	93	39	117	120	428
Total in area	: 184	192	136	281	258	1,051

1/ Those who moved to their present location in 1930 or later.

2/ Arizona, Idaho, Nevada, and Utah.

3/ Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

4/ Colorado, Kansas, New Mexico, Oklahoma, and Texas.

Table 15.- Relation between number of cleared acres and number of productive animal units, five local areas of western Washington, 1939

Number of cleared acres per farm	Number of farms with specified number of productive animal units per farm								
	: 0.1	: 2.5	: 7.5	: 12.5	: 20.0	: 30.0	: 40.0	:	
	: None	: to	: to	: to	: to	: to	: to	: and	: Total
	: 2.4	: 7.4	: 12.4	: 19.9	: 29.9	: 39.9	: over	:	
	: Number	: Number	: Number	: Number	: Number	: Number	: Number	: Number	: Number
None	: 30	: 26	: 12	: 7	: 4	: 2	: 1	: —	: 82
0.1 — 1.9	: 59	: 122	: 50	: 13	: 7	: 3	: —	: —	: 254
2.0 — 4.9	: 46	: 108	: 82	: 19	: 8	: 4	: —	: —	: 267
5.0 — 9.9	: 20	: 46	: 84	: 24	: 11	: 2	: —	: —	: 187
10.0 — 15.9	: 8	: 14	: 49	: 40	: 12	: 2	: 1	: —	: 126
16.0 — 24.9	: 6	: 7	: 8	: 13	: 16	: 2	: 1	: —	: 53
25.0 — 39.9	: 3	: —	: 10	: 11	: 7	: 8	: 6	: —	: 45
40.0 and over	: —	: 2	: 5	: 5	: 12	: 7	: 5	: 1	: 37
Total	: 172	: 325	: 300	: 132	: 77	: 30	: 14	: 1	: 11,051

Table 16.- Source. of funds used for farm operation and family living, farms of five local areas in western Washington, classified by type and size, April 1, 1938, to March 31, 1939 ^{1/}

Item	Old farms			New farms		
	Small	Medium	Large	Undeveloped tracts	Small	Medium and large
<u>Number of farms</u>	56	57	35	47	58	14
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
<u>Net cash farm income</u> ^{2/}	-25	214	483	-77	-91	256
<u>Off-farm employment:</u>						
Public works assistance	146	33	0	250	277	0
Private and non-emergency public employment	223	195	177	225	246	137
<u>Pensions and cash relief</u>	64	1	18	80	32	0
<u>All other income</u>	54	43	82	32	52	8
<u>Loans and cash reserves</u>	46	123	214	28	38	222
Sub-total	508	609	974	538	554	623
<u>Interest and indebtedness payments</u>	69	93	196	43	80	129
<u>Net available for family living</u>	439	516	778	495	474	494

^{1/} Includes income to all members of the family living on the farm.

^{2/} Gross farm receipts minus gross cash expenditures, except interest and indebtedness payments which are shown separately in the lower part of the table. Increases in livestock inventory were included as a cash receipt because they can be readily converted into cash. Expenditures for investment items, such as land clearing and new buildings, are included. Cash income attributable to the year's operations, excluding cash investments, is shown in table 4.

Table 17.- Number of family heads with specified amounts of off-farm employment, classified by major type of employment, five local areas of western Washington, April 1, 1938 to March 31, 1939

Number of months of employment	No off-farm employment	On nearby farms	Lumber industries 1/	Other private and public service 2/	Relief work 3/	Grants and pensions 4/	Combination: relief work, pensions and private jobs:	Total
	Number	Number	Number	Number	Number	Number	Number	Number
None	270	0	0	0	0	77	0	347
Less than 0.5	0	9	1	10	2	0	0	22
0.5 - 1.9	0	14	6	21	4	0	0	45
2.0 - 3.9	0	15	33	26	10	0	4	88
4.0 - 5.9	0	6	21	20	26	0	4	77
6.0 - 7.9	0	4	31	18	37	0	10	100
8.0 - 9.9	0	5	23	11	23	0	9	71
10.0 - 12.0	0	6	41	65	128	0	24	264
Length of time not reported	0	2	2	8	23	0	2	37
Total	270	61	158	179	253	77	53	1,051
Percent of total:	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
in each type of employment	26	6	15	17	24	7	5	100

1/ All wood-working enterprises, including logging, fuel cutting, etc.

2/ All private employment except wood working, and regular public-service employment such as road work, postal service, and teaching.

3/ Includes Work Projects Administration and Civilian Conservation Corps.

4/ Cash or in-kind payments from public funds where no work is performed in return for the consideration.

Table 18.— Percentage distribution of operators by type of off-farm employment, irrespective of amount of employment, five local areas in western Washington, April 1, 1938 to March 31, 1939

Item	: Operators in specified types of employment by areas					
	: Yacolt	: Salkum	: Duvall	: Monroe	: Getchell	: All
	: area	: area	: area	: area	: area	: areas
<u>Number reporting</u>	: 184	192	136	281	258	1,051
<u>Type of employment:</u>	: <u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
No off-farm employment	: 34.2	30.2	20.6	18.9	26.4	25.7
On nearby farms	: 8.2	7.3	7.4	4.3	3.9	5.8
Lumber industries	: 9.2	30.2	7.4	6.0	21.7	15.0
Relief work	: 17.4	6.8	35.3	35.6	23.3	24.1
Other private and public service	: 18.5	19.3	17.6	16.0	15.1	17.0
Grants and pensions	: 5.4	—	9.5	11.7	8.1	7.4
Combination relief work, pensions, and private jobs	: <u>7.1</u>	<u>6.2</u>	<u>2.2</u>	<u>7.5</u>	<u>1.5</u>	<u>5.0</u>
All operators	: 100.0	100.0	100.0	100.0	100.0	100.0

Table 19.- Percentage of families by size of family, and of all individuals, in specified family expenditures per person, five local areas of western Washington, April 1938 to March 1939

Item	Percentage with specified expenditures per person					
	Number of persons per family				All families	All individuals
	1 and 2	3 and 4	5 and 6	7 or more		
Number	Families	Families	Families	Families	Families	Persons
	94	95	51	27	267	991
Family expenditures per person (dollars)	Percent	Percent	Percent	Percent	Percent	Percent
Under 50	0	0	2	19	2	5
50 - 74	4	11	23	15	11	15
75 - 99	4	18	26	44	17	24
100 - 149	20	34	31	22	27	27
150 - 199	26	19	16	0	19	14
200 - 249	23	6	2	0	11	7
250 - 299	9	7	0	0	6	4
300 and over	14	5	0	0	7	4
All groups	100	100	100	100	100	100

Table 20.- Average family expenditures for specified items, old and new settlers, five local areas of western Washington, April 1, 1938 to March 31, 1939

Item	: Old farms : : with old : : settlers : : 1/ :	: Old farms : : with new : : settlers : : 2/ :	: New farms : : with new : : settlers : : 3/ :	: All : farms
	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>
Number of families	: 111	: 37	: 119	: 267
Number of persons per family	: 3.4	: 4.0	: 3.9	: 3.7
Kind of expenditure:	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>	: <u>Dollars</u>
Food purchased	: 204	: 214	: 228	: 216
Clothing	: 60	: 68	: 50	: 57
Household operation	: 10	: 12	: 10	: 10
Housing	: 19	: 19	: 15	: 17
Auto operation	: 66	: 81	: 95	: 81
Personal	: 51	: 63	: 43	: 49
Medical	: 41	: 32	: 33	: 36
All other	: 26	: 15	: 12	: 18
Total expenditures	: 477	: 504	: 486	: 484

1/ Farms established before 1930 with present occupant on farm before 1930.

2/ Farms established before 1930, but present occupant not on farm until 1930 or later years.

3/ Farms with little or no development before 1930 and present occupant not on farm until 1930 or later years. Five settlers included who moved onto present place before 1930, but practically no farm development had been done by 1939.

Table 21.- Quantities of farm-produced products used in the home, old and new settlers, western Washington, April 1, 1938 to March 31, 1939

Product	Unit	Old farms: with old settlers	Old farms: with new settlers	New farms: with new settlers	All farms
		1/	2/	3/	
Whole milk	Gallon	265	311	212	248
Fresh cream	do.	8	7	7	7
Butter	Pound	25	25	27	26
Eggs	Dozen	114	130	81	102
Chickens	Number	23	28	12	19
Hogs	do.	.7	.8	.3	.5
Calves	do.	.2	.5	.1	.2
Cattle (1 year & older)	do.	.1	.2	.1	.1
Potatoes	Bushel	9	10	3	7
Berries	Quart	2	0	3	2
Home preserved or canned:					
Vegetables	do.	96	105	72	86
Fruit	do.	137	137	71	108

1/ Farms established before 1930 with present occupant on farm before 1930.

2/ Farms established before 1930, but present occupant not on farm until 1930 or later years.

3/ Farms with little or no development before 1930 and present occupant not on farm until 1930 or later years. Five settlers included who moved onto present place before 1930, but practically no farm development had been done by 1939.

Table 22.- Housing on cut-over farms by type of settler and type of house construction, five local areas of western Washington, 1939

Item	Type of house construction 1/				
	Type 1	Type 2	Type 3	Type 4	All types
Number of farms	44	168	21	34	267
Percentage of farms in each type:	Percent	Percent	Percent	Percent	Percent
Old farms with old settlers	8	71	5	16	100
Old farms with new settlers	16	57	8	19	100
New farms with new settlers	24	58	10	8	100
All farms, average	16	63	8	13	100
Percentage of all farms in each type with houses unpainted	95	49	24	21	51
Rooms per dwelling:	Number	Number	Number	Number	Number
Old farms with old settlers	3.1	5.6	5.7	6.1	5.5
Old farms with new settlers	3.8	4.9	6.7	8.3	5.5
New farms with new settlers	3.0	3.9	4.5	5.0	3.8
All farms, average	3.2	4.8	5.1	6.3	4.7
Value of dwelling:	Dollars	Dollars	Dollars	Dollars	Dollars
Old farms with old settlers	133	910	1,033	1,856	1,007
Old farms with new settlers	272	598	750	1,921	808
New farms with new settlers	155	540	635	1,217	507
All farms, average	167	718	765	1,702	756

1/ Type 1 - Box, rough frame, tarpaper covered, or log construction with no basement;

Type 2 - Frame construction; with wood, concrete blocks, or concrete or stone foundations; with no basement;

Type 3 - Frame construction; with wood or concrete blocks foundation; with basement;

Type 4 - Frame construction; concrete or stone solid foundation; with basement.

